CURTIS'S

BOTANICAL MAGAZINE,

COMPRISING THE

Plants of the Royal Gardens of Kew

AND

OF OTHER BOTANICAL ESTABLISHMENTS IN GREAT BRITAIN;

WITH SUITABLE DESCRIPTIONS;

BY

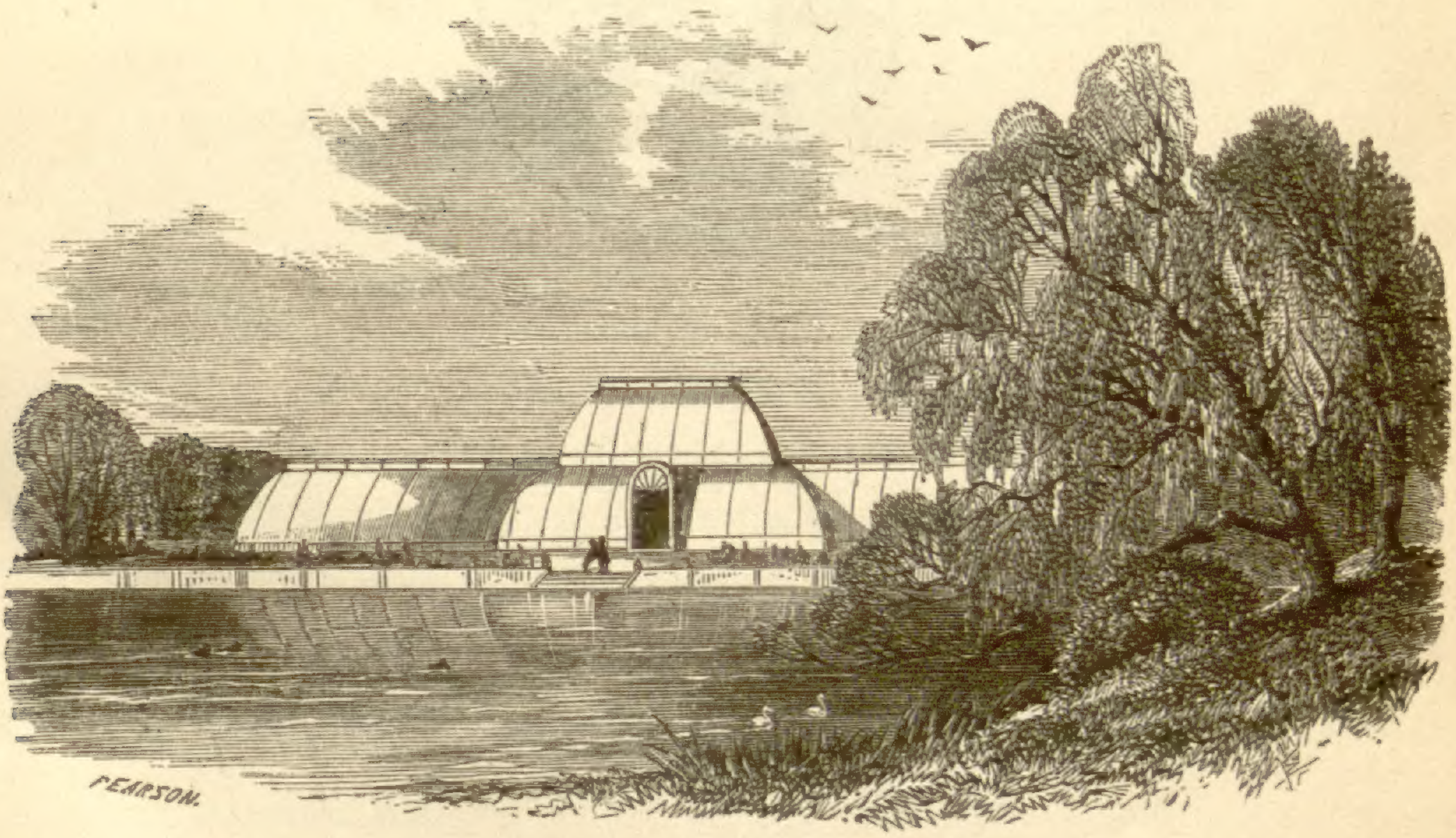
SIR WILLIAM JACKSON HOOKER, K.H., D.C.L. Oxon.,

F.L.S., CORRESPONDING MEMBER OF THE ACADEMY OF SCIENCES OF THE IMPERIAL INSTITUTE OF FRANCE, AND DIRECTOR OF THE ROYAL GARDENS OF KEW.

VOL. XVII.

OF THE THIRD SERIES;

(Or Vol. LXXXVII. of the Whole Work.)



"Who loves a garden loves a greenhouse too:
Unconscious of a less propitious clime,
There blooms exotic beauty, warm and snug,
While the winds whistle and the snows descend."

LONDON:

LOVELL REEVE & CO., HENRIETTA STREET, COVENT GARDEN.

1861.


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JOHN EDWARD TAYLOR, PRINTER,
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TO

DR. FREDERICK MUELLER, PH. ET M.D.,

FELLOW OF THE ROYAL SOCIETY OF LONDON,

ETC. ETC. ETC.,

THE ENLIGHTENED AND ENERGETIC GOVERNMENT BOTANIST AT VICTORIA,

AUSTRALIA,

DIRECTOR OF THE GOVERNMENT BOTANIC GARDEN OF MELBOURNE,

WHO HAS ADVANCED OUR KNOWLEDGE OF THE BOTANY OF ALL AUSTRALIA

IN SO EMINENT A DEGREE, BY HIS WRITINGS AND BY HIS TRAVELS,

ESPECIALLY IN THE AUSTRALIAN ALPS,

AS TO JUSTIFY THE RESPECTIVE GOVERNORS OF

THAT VAST TERRITORY IN PROMOTING THE PUBLICATION OF A

"FLORA AUSTRALICA,"

The present Volume is Dedicated,

WITH THE SENTIMENTS OF THE HIGHEST REGARD AND AFFECTION, BY

THE AUTHOR.

Royal Gardens, Kew,
December 31, 1861.

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W. Fitch, del. et lith.

Vincent Brooks, Imp



Vincent Brooks, Imp.

Musa Ensete.

Ensete, or Bruce's Banana.

Nat. Ord. Musaceæ.—Polygamia Monœcia.

Gen. Char. Perigonium epigynum, bilabiatum; *labium inferius* tubulosum, postice usque ad basin fissum, apice quinquelobum; *superius* concavum, nanum, amplectens. *Stamina* 5, sexto postico abortivo. *Ovarium* inferum, triloculare. *Ovula* in loculorum angulo centrali plurima, biseriata, horizontalia, anatropa. *Stylus* crassus; *stigma* infundibuliformi-clavatum, breviter sex-lobum. *Bacca* oblonga, angulata, trilocularis, *seminibus* plurimis in pulpa nidulantibus sæpius effœtis farcta. *Semina* depressiuscula, subglobosa, *testa* crustacea, atra, ad umbilicum impressa. *Embryo* orthotropus, fungiformis, in axi albuminis subfarinosi, extremitate radiculari umbilicum attingente, centripeta.—Herbæ *gerontogeæ, tropicæ vel subtropicæ, in Americam introductæ, giganteæ;* trunco *e petiolorum vaginis longissimis* scapum *radicalem, solo apice liberum, floriferum velantibus conflato;* lamina *foliorum amplissima, valde nervosa;* floribus *in axilla spatharum confertis, ebracteatis. Endl.*

Musa *Ensete*, excelsa (40-pedalis) perennis, stolonibus nullis, caule basin versus valde incrassato, foliis brevi-petiolatis (vaginis longissimis) oblongis acutis firmis, costa valida dorso purpureo-fusco, spadice brevi-petiolato nutante dense spathaceo, spathis amplis, floribus densissimis compactis, perigonii labio minore longe mucronato, fructibus oblongo-pyriformibus abortu 1–3-spermis, seminibus magnitudine coryli avellanæ.

Musa Ensete. *Gmel. Syst. Nat. v.* 2. *p.* 567. *Hook. in Kew Gard. Misc. v.* 8. *p.* 210.

Ensete. *Bruce, Trav. in Abyss. (Engl. ed.* 8*vo) v.* 7. *p.* 149; *and Atlas,* 4*to, t.* 8, 9.

Enseté. *Poir. in Dict. Sc. Nat. v.* 14. *p.* 515.

Ansett. *Plowden, in litt.*

The celebrated James Bruce, of Kinnaird, was unquestionably one of the most remarkable travellers of the last century, but he unfortunately obtained little credit during his lifetime for his many interesting discoveries. It was left for future travellers to confirm their accuracy; and if we consider the state of science at the time Bruce became a traveller, and the multitude of objects that his researches embraced, it must be allowed that few have displayed more accuracy, and none more indomitable energy. It is now nearly a hundred years since Bruce entered Abyssinia with the view of discovering the source of the Nile. It was

then that he found the remarkable plant to the illustration of which we have devoted two plates, and which would still have remained unknown to us to the present day (save from Bruce's description and really accurate figures), but for the kindness of Walter Plowden, Esq., our late British Consul at Mussowah, who sent the seeds of this plant to me in 1853, under the native name, "*Ansett.*" From our ignorance of the appearance of the seeds of any Banana (the cultivated Bananas and Plantains do not perfect their seeds), we did not at first recognize these seeds as connected with that family of the Vegetable Kingdom; but the growth being rapid in our Palm-house, we soon discovered our plant to be the "*Ensete*" of Bruce (not Enseté, as written by Poiret). But if this distinguished Abyssinian explorer was wrong in pronouncing it, as he did, to be "no species of *Musa*," we must remember that he could have only been acquainted with the Bananas known in cultivation; and he certainly well distinguished his plant from these. "It is true," he says, "the leaf of the Banana resembles that of the Ensete; it bears figs,* and has an excrescence (the spadix) from its trunk, chiefly differing from the *Ensete* in size, etc.; but the figs of a Banana are in shape of a cucumber, and this is the part that is eaten. The fig is sweet, though mealy, and of a taste highly agreeable. It is supposed to have no seeds" (the flowers being abortive), "but the figs of the *Ensete* are *not eatable;* they are of a tender, soft substance, watery, tasteless, and in colour and consistence similar to a rotten apricot; they are of a conical form, crooked a little at the lower end, about an inch and a half in length, and an inch in breadth where thickest. In the inside of these there is a large stone, half an inch long, of the shape of a bean or Cashew-nut, of a dark-brown colour." And again, the stem of the Banana, as is well known, is an annual, bearing its fruit as soon as its stem and foliage have attained their full size, and then perishing down to the root, and no part of the stem can be eaten. "The body of the trunk of the *Ensete* for several feet high is esculent; and while young, is, when cooked, the best of all vegetables, tasting like wheat-bread not perfectly baked. . . . When you make use of the *Ensete* for eating, you cut it immediately above the roots, and perhaps a foot or two higher if the plant is advanced in age; you strip the green from the upper part till it becomes white, where it is soft, like a turnip well boiled; if eaten with milk and butter, it is the best of all food."

To understand clearly the part that is eaten of the Ensete, we must consider the mode of growth of the plant. The leaves, at least the very broad sheathing bases, all spring from a large, very

* The French call the small-fruited kinds "*Figues Bananiers.*"

solid, but fleshy, pure-white, conical rhizome (fibrous with roots beneath), and constitute the stem, and they are of so coarse a nature, and so full of fibre and air-cells, as to be totally unfit for food. But in the centre of this is the axis, formed of the peduncle or scape, which bears the spadix at the extremity in course of time (ten years according to Bruce, three to five years from our experience). This is as thick as a man's arm, pure white, as is the sheath formed by the broad bases of the petioles that surround it, rises gradually from the rhizome, increases in length, bearing large membranaceous close-pressed bracts, and, where it emerges from the sheathing leaves, one or two small, foliaceous bracts, carrying up with it the later-formed upper leaves with the infant spadix. Now it is while the centre, or scape, is young and tender, in a state exactly analogous to the "cabbage" in Palms and in Cycadaceous plants, etc., that it is excellent and nutritious: as soon as it is mature it turns hard, and is no longer eatable. Bruce has given a representation of this scape, stripped of its external covering.

The *Ensete* appears to be peculiar to Abyssinia, particularly abundant in Naree, growing in the great swamps and marshes of that country, formed by rivers rising there which have no outlet. It comes to great perfection at Gondar, but most abounds in that part of Maitsha and Goutto west of the Nile, where there are large plantations of it, and is there, almost to the exclusion of anything else, the food of the Galla inhabiting that province. At Maitsha they cannot grow grain, and vegetable food would therefore be very scarce were it not for this plant.

Not only botanically has Bruce discussed this fine plant, but historically, as connected with the mythology of Egypt. "We see," he says, "in some of the Egyptian antique statues the figure of Isis sitting between the branches (foliage?) of the Banana-tree, as it is supposed, and some handfuls of ears of wheat; you see also the hippopotamus ravaging a quantity of Banana-trees. But the (true) Banana is not a plant of the country, and could never have entered into the list of their hieroglyphics; for this reason, it could not figure anything permanent or regular in the history of Egypt or its climate. I therefore imagine that this hieroglyphic was wholly Ethiopian, and that the supposed Banana, which, as an adventitious plant, signifies nothing in Egypt, was only a representation of the *Ensete*, and that the record in the hieroglyphic of Isis and the *Ensete*-tree was something that happened between harvest and the time the Ensete-tree came to be in use, which is in October. The hippopotamus is generally thought to represent the Nile, that has been so abundant as to be destructive. When, therefore, we see upon the obelisks the hippopotamus destroying the Banana, we may

suppose it meant that the extraordinary inundation had gone so far as not only to destroy the wheat, but also to retard or hurt the growth of the Ensete, which was to supply its place. I do likewise conjecture that the bundle of branches of a plant, which Horus Apollo says the ancient Egyptians produced as the food on which they lived before the discovery of wheat, was not the Papyrus, as he imagines, but this plant, the *Ensete*, which retired to its native Ethiopia upon a substitute being found better adapted to the climate of Egypt."

For all the above information we are mainly indebted to the labours of Bruce.

In the previous notice of our *Ensete* in the 'Kew Garden Miscellany,' *l. c.*, we remarked that, of the described species of *Musa*, this has perhaps the nearest affinity with the *Musa superba*, Roxb. Coromand. Pl. v. 3. t. 323, and of our Bot. Mag. t. 3849 and 3850, a native of the southern peninsula of India; but besides the difference in the inflorescence, the seeds are quite of another form, size, and character: in *M. superba* the seeds are numerous, arranged in two rows in each of the three cells; the plant is very different, for the trunk is quite conical, only three feet high, yet seven and a half feet in circumference close to the ground. Again, *M. Ensete* in some respects approaches *M. glauca*, Pl. Corom. v. 3. t. 300, a native of Pegu, but the stem and foliage do not correspond, and the latter is of a remarkably glaucous hue, as indicated by the specific name; whereas our plant has bright yellow-green foliage, and the costa deep purple-brown on the under side. The fruit of all three resemble each other in general form and size, and all are seed-bearing, scarcely pulpy, and uneatable. They produce no suckers from the root, like the true Bananas, consequently our dependence for the perpetuity of the species in our stoves must be on seed: and, fortunately, although our first flowering-plant yielded no seed, our second one has (while we are writing, December, 1860,) been found to ripen three fruits, and the seeds are quite perfect.

Descr. The general aspect of our *plant* is quite that of our usual cultivated Bananas, with esculent fruits, but the height is much greater, and the stem much swollen at the base. In five years in one case, in another in three, of our flowering specimens, they have attained their full size, nearly forty feet to the summit of the foliage. We have measured the *blades*, seventeen to eighteen feet long; they are firm and rigid, not easily tearing transversely, and they are erecto-patent; this position is perhaps due to the shortness of the contracted part of the *petioles*, all below that expands into the huge sheathing amplexicaul bases, an inch and a half thick and two feet broad, constituting the *stem*; the latter is sensibly swollen below the middle, biggest at the

base. From the centre of this great mass of foliage, and when this latter has attained its fullest dimensions, the spadix, terminating the internal scape, as above described, makes its appearance, and gradually droops. It is four feet long, densely clothed, for two feet of its apex, with numerous, large, ovate, greenish-brown *spathas* (generally bearing drops of fluid from the floral nectaries). The upper spathas have male flowers, the lower, females. These in the young state are not easily distinguishable, but by the former having a less perfect style and stigma. Lower down, upon the *spadix*, all the spathas seem to include perfect or fertile flowers, so that when the spathas fall away, the swelling *ovaries* lie in spiral circles, densely compacted, green, oblong, quite sessile, two inches long. This *ovary* is white, inferior, three-celled (rarely four), filled with many ovules in two rows, and supports a perianth of two very unequal, white, membranaceous *sepals*, the outer and larger one strap-shaped, concave at the base, three-cleft at the apex, the inner one ovate, very concave, three-toothed, the central tooth prolonged into a subulate point, each, no doubt, as indicated by the divisions at the apex, formed of three pieces. *Stamens* six, erect, one small and abortive, the rest twice as large. *Anther* as long as the filaments, two-celled. *Fruit* two and a half to nearly four inches long, oblongo-subpyriform, bearing from one to four large, black, glossy seeds, shaped as represented in our figure.

Tab. 5223 represents an Abyssinian scene, with *Ensetes*, on a very reduced scale.

Tab. 5224. Fig. 1. One of the spathas of the spadix, with male flowers,—*natural size.* 2. Male flower, with its abortive ovary and imperfect style. 3. Perfect flower. 4. Section of an ovary. 5. Scarcely mature fruit. 6. The same, cut through transversely. 7. Mature fruit. 8. Back view of a seed. 9. Seed seen from the under side, with the hilum:—*all natural size.* 10. Seed, cut through transversely,—*slightly magnified.*

2.

Tab. 5225.

PUYA Warszewiczii.

Warszewicz's Puya.

Nat. Ord. Bromeliaceæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4991.)

Puya *Warszewiczii*; foliis 2–3-pedalibus lato-lanceolatis anguste acuminatis striatis subundulatis inferne longe anguste attenuatis canaliculatis basi dilatatis amplexantibus supra basin solummodo retrorsum aculeatis, scapo inferne foliaceo dein in spicam oblongam terminante dense bracteato, bracteis imbricatis rubro-sanguineis lanceolato-acuminatis flores albo-flavescentes superantibus, petalis lineari-spathulatis basi squama apice lacera intructa.

Puya Warszewiczii. *Wendland, in litt.*

This may be reckoned among the handsomest of the many handsome tropical *Bromeliaceæ*. Its leaves are peculiar, very long, and rather flaccid and undulated, singularly narrow and contracted and grooved towards the base, and there alone furnished for about the length of four inches at each margin with dark brown reflexed spinules. The contrast is striking between the yellowish-white and rather large flowers, and the deep blood-coloured, long, acuminated, and imbricated bracteas. We are indebted to Mr. Wendland, of the Royal Gardens, Hanover, for the plant here figured, which flowered in our stove, August, 1860. We do not find it anywhere described, and adopt the name by which we received it. It is supposed to be a native of Guatemala.

Descr. Whole *plant* two to three feet high. *Leaves* radical, two to three feet long, from a broad amplexicaul base gradually narrowing, with involute margin, and there alone spiny with reflexed black *prickles*, again expanding into a long lanceolate acuminated blade, nearly three inches in diameter in its widest part, subcoriaceous, striated, subundulate, quite entire, dark green, paler beneath. *Scape* shorter than the leaves, leafy below; the leaves gradually becoming *bracteas* upwards, and then bearing a large, oblong, densely bracteated *spike*. *Bracteas* of a deep rich

blood-colour, broad lanceolate, sharply acuminated, rigid. *Flowers* large, yellowish-white, scarcely exceeding the bracts. *Calyx* of three equal, oblong-lanceolate, very acute *sepals*, united at their base. *Petals* spathulate, each with a large oval *scale* at the base, notched at its apex.

Fig. 1. Flower,—*slightly magnified.* 2. Petal,—*more magnified.*



W Fitch del et lith.

Ingram Bro & Harp

Tab. 5226.

TABERNÆMONTANA GRANDIFLORA.

Large-flowered Tabernæmontana.

Nat. Ord. Apocyneæ.—Pentandria Monogynia.

Gen. Char. Calyx quinquepartitus, lobis basi intus glandula auctis, persistens. *Corolla* hypogyna, hypocraterimorpha, fauce nuda; *limbi* quinquepartiti laciniis obliquis. *Stamina* 3, medio corollæ tubo inserta, inclusa; *antheræ* sagittatæ, subsessiles. *Stylus* unus, filiformis; *stigma* e basi dilatata bifidum. *Squamulæ* hypogynæ nullæ. *Folliculi* 2, oblongi, v. subglobosi, carnosi, pulposi, divaricati v. adpressi, abortu sæpe solitarii, demum fatiscentes. *Semina* plurima, intra pulpam cellulosam nidulantia, compressiuscula, angustata. *Embryo* in axi albuminis carnosi rectus; *cotyledonibus* foliaceis; *radicula* cylindrica, vaga.—Arbusculæ *in America et Asia tropica indigenæ;* foliis *oppositis;* stipulis *interpetiolaribus, infra adnatis, apice solutis;* cymis *subdichotomis. Endl.*

Tabernæmontana *grandiflora;* ramulis dichotomis, foliis ovalibus v. elliptico-obovatis basi obtusis apice longe et acute cuspidatis glabris, pedunculis terminalibus bifurcatis paucifloris, foliis floralibus ovato-acutis sessilibus, lobis calycinis amplissimis ellipticis tribus interioribus angustioribus, tubo corollæ calyce vix duplo longiore, lobis obovatis obtusissimis tubo brevioribus, folliculis ovoideo-acuminatis. *Alph. De Cand.*

Tabernæmontana grandiflora. *Jacq. Amer. p.* 40. *f.* 31. *Lam. Illustr. t.* 170. *f.* 2. *Roem. et Schult. v.* 4. *p.* 424. *Spreng. Syst. Veget. v.* 1. *p.* 640. *De Cand. Prodr. v.* 8. *p.* 368.

A rare shrub in collections, we believe; native of Carthagena, according to Jacquin, its discoverer and first describer, and of Guiana, where it was found by Sir Robert Schomburgk. Our living plant was brought from Venezuela, by Mr. Birchill. It forms a small evergreen shrub about two to two and a half feet high, requires the heat of a stove, and then bears its rather copious yellow flowers, which have almost the colour of the yellow Jessamine, but are much larger; produced in September.

Descr. A small glabrous *shrub*, with dichotomous, terete *branches*, the elder ones clothed with thin, brown *bark*, the younger ones greenish. *Leaves* two to three inches long, opposite, often unequal, patent or reflexed, shortly petiolate, oblong-ovate or subovate, sharply almost pungently acuminate, obtuse

at the base, penniveined, pale beneath. *Cyme* pedunculate, few-flowered, subtrichotomously divided, the branches bracteated, and two, large, opposite, ovate, pale green *bracts* occupy the base of the flower. *Calyx* of five deep lobes, two outer ones large and bracteiform, three inner ones smaller, all erect. *Corolla* large, hypocrateriform, yellow: *tube* of the corolla two inches long; *limb* of five, large, oblique, spreading, oval, obtuse *lobes*. *Stamens* included. *Ovaries* two, surrounded by a fleshy lobed disc. *Styles* united into one. *Fruit* a double *follicle*, reflexed, broad ovate, sharply acuminate, according to Jacquin.

Fig. 1. Tube of the corolla, laid open to show the stamens. 2. Ovaries and combined styles:—*magnified.*

Tab. 5227.

COSMOS DIVERSIFOLIUS; var. *atro-sanguineus*.

Various-leaved Cosmos; deep blood-flowered var.

Nat. Ord. Compositæ: Senecionideæ.—Syngenesia Frustranea.

Gen. Char. Capitulum multiflorum, radiatum, *ligulis* neutris. *Involucrum* duplex, utrumque squamis 8–10 basi plus minus concretis apice acuminatis. *Receptaculum* planum, paleaceum, paleis membranaceis in filum elongatum productis. *Styli* rami apice incrassati, hispidi, in conum subulatum producti. *Antheræ* apice appendice scariosa cordata superatæ. *Achenium* tetragonum, exalatum, rostratum, et interdum stipitatum, *aristis* 2–4 retrorsum piloso-scabris deciduis coronatum.—Herbæ *Americanæ, annuæ, glabræ, aut vix pilosulæ, elatæ, ramosæ.* Folia (*pinnati- v.*) *bipinnatisecta, lobis linearibus lanceolatis sæpius margine integerrimis.* Capitula *ad apices ramorum longe nudorum solitaria.* Discus *intense luteus.* Radius ***versicolor. De Cand.***

Cosmos *diversifolius*; bi-tripedalis ramosus glaber, foliis longe petiolatis pinnatis, pinnis 5–7 foliorum superiorum lanceolatis inferiorum rhombeo-ovatis integerrimis vel remote serratis, floribus longissime pedunculatis amplis, involucri duplici foliolis lanceolatis subreflexo-patentibus exterioribus patentisubreflexis 8–10 herbaceis, interioribus totidem submembranaceis coloratis, flosculis radii ellipticis apice tridentatis involucro duplo longioribus, achenii aristis 2.

Cosmos diversifolius (floribus lilacinis). *Otto in Knowles and Westcott, Floral Cab. v. 2. p. 3. t. 47.*

Var. floribus atro-sanguineis. (Tab. Nostr. 5227.)

Seeds of this plant were received by Mr. Thompson, of Ipswich, from Mexico. It is doubtless a handsome species of *Cosmos*. The question is if it can be safely referred to any described species. The genus is described as having bipinnate leaves (or "folia bipinnatisecta"). Our plant has its leaves simply pinnate. Two species are described and figured with foliage of this character, one the *C. scabiosoides* of H. B. K., and Lindley, in Bot. Reg. 24. t. 15, but that has much smaller flowers, though nearly of the same colour as ours, and entire ligulate florets; the other is the *C. diversifolius* of Otto in Knowles and Westcott, *l. c.*, whose flowers sufficiently correspond with ours except in colour. Unfortunately, in both cases, only upper portions of the plant (without root-leaves) are given, and the foliage

there accords sufficiently well with ours. We prefer adopting Otto's name, rather than encumber the system with new but doubtful species. Our plant is very luxuriant, owing probably to richness of soil The peduncles are a foot and a half long; the lower leaves are eight to nine inches long, with pinnæ one and a half to two and a half inches, and an inch to an inch and a half broad. The colour of the flowers is a deep purple blood-colour, with a good deal the habit of a small single-flowered *Dahlia*. This plant is best preserved in a greenhouse in the winter, and turned into the open border in the summer.

Fig. 1. Floret of the ray. 2. Floret of the disc. 3. Awn of the pappus :— *magnified.*

1.
3.

Tab. 5228.

CENTRADENIA GRANDIFOLIA.

Large-leaved Centradenia.

Nat. Ord. Melastomaceæ.—Octandria Monogynia.

Gen. Char. Centradenia, *Don. Flos* 4-merus. *Calyx* subtetragonus, campanulatus, *dentibus* brevibus. *Petala* obovata, apice rotundata aut acuta. *Stamina* 8, alternatim inæqualia; *antheris* oblongo-ovoideis ovoideisve apice obtusis aut brevissime rostellatis, 1-porosis; *loculis* undulatis, 4 majorum connectivo infra loculos longe producto arcuato et ultra filamenti insertionem in appendicem bilobam, antice porrecto, 4 minorum multo minus producto et antice appendicula subglobosa subbilobave terminato. *Ovarium* 4-loculare, apice setulis styli basim cingentibus coronatum. *Stylus* filiformis, sigmoideus, *stigmate* puncti-formi interdumque nonnihil capitellato. *Capsula* calyce persistente, loculicide 4-valvis. *Semina* minuta, ovoidea.—Suffrutices fruticul*ive Mexicani et Guatemalenses, monticolæ, erecti, ramosi;* foliis *petiolatis, lanceolatis, in eodem jugo utplurimum maxime disparibus, uno alterum nonnunquam decies et amplius superante;* floribus *ad apices ramulorum plerumque ternis quinisve, interdum corymbos mentientibus, roseis aut albis. Naudin.*

Centradenia *grandifolia;* frutex, ramis junioribus tetragonis angulis profunde alatis, foliis 6-uncialibus brevi-petiolatis ovato-lanceolatis acuminatis 3–5-nerviis integerrimis glaberrimis minute ciliatis subtus purpureis, calycis segmentis membranaceis appressis.

Centradenia grandifolia. *Endl. Naud. in Hort. Linden. v.* 1. *p.* 7. *t.* 4. *Monog. Melast. p.* 77.

Plagiophyllum grandifolium. *Schlecht. in Linnæa, v.* 13. *p.* 429.

We owe the possession of this pretty Mexican Melastomaceous plant to Mr. Linden, of Brussels; but we scarcely think it worthy, handsome as it is, to "rank as an ornamental plant with the *Cyanophyllum* and *Medinilla*." It is probably rare in collections. Mr. Linden speaks of it as gathered at Chiconquiaco, in 1836, by Dr. Schiede. Our only native specimen, and that a very indifferent one, is from the same source, Dr. Schiede. This, indeed, differs slightly from our growing one, but by no means specifically. The calyx-tube is pubescent in the native sample, not glabrous as in ours, while the peduncles are more pubescent, and the wings of the branches appear to be far less developed; but that appearance may be due to the drying and pressure.

Fig. 1. Flower. 2. Stamens. 3. Calyx and pistil :—*more or less magnified.*

February 1st, 1861.



W. Fitch, del et lith.

Vincent Brooks, Imp.

Tab. 5229.

TILLANDSIA PULCHELLA.

Delicate Tillandsia.

Nat. Ord. Bromeliaceæ.—Hexandria Monogynia.

Gen. Char. Perigonii liberi 6-partiti *laciniæ exteriores* calycinæ, æquales, basi cohærentes, spiraliter convolutæ, duo altius inter se connatæ, tertia minor, *interiores* petaloideæ, inferne in tubulum convolutæ v. connatæ, superne patentes, basi intus nudæ v. rarius squamosæ. *Stamina* 6, hypogyna; *filamenta* linearia, alterna, sæpius perigonii laciniis interioribus adhærentia; *antheræ* incumbentes, basi sagittato-emarginatæ. *Ovarium* liberum, triloculare. *Ovula* loculorum angulo centrali prope basin plura, biseriata, adscendentia, anatropa. *Stylus* filiformis; *stigma* trifidum, lobis abbreviatis v. filiformibus aut apice dilatatis, rectis v. contortis. *Capsula* cartilaginea, linearia v. ovata, trilocularis, loculicido-trivalvis; *valvis* endocarpio mox soluto duplicatis, explanatis v. tortis. *Semina* plurima, e basi dissepimentorum erecta, lineari-clavata, stipitata, stipite pilis papposis cincto, testa dura; *chalaza* terminali mamillari. *Embryo* in basi albuminis farinosi rectus, extremitate radiculari infera.—Herbæ *in America tropica et extratropica calidiore indigenæ, ut plurimum pseudoparasiticæ, lepidotæ;* caulibus *foliolis simplicibus v. rarius ramosis;* floribus *spicatis v. paniculatis, rarius solitariis, bracteatis. Endl.*

Tillandsia *pulchella;* acaulis cæspitosa, foliis subulatis canaliculatis incano-lepidotis, scapo solitario folia æquante floribusque squamis imbricatis oblongis convolutis intense roseis tectis, calycis laciniis oblongis erectis albis basi unitis, corollæ albæ petalis spathulatis stamina superantibus, filamentis medium versus insigniter crispato-flexuosis.

Tillandsia pulchella. *Hook. Exot. Flora, t.* 134. *Rœm. et Schult. Syst. Veget. v. 7. p.* 1207.

Pourretia Surinamensis. *Hort. Amstelod.*

We received living specimens of this pretty epiphyte lately from the Amsterdam Botanic Garden, under the name of *Pourretia Surinamensis*, but it is unquestionably our *Tillandsia pulchella* of the 'Exotic Flora,' and which was sixteen years ago received from Trinidad, and flowered in the Botanic Gardens at Glasgow. It appears to be a common epiphyte in the West Indies, and probably in tropical South America, where many species of the genus abound, clothing the trunks of trees in the same way as the epiphytal orchideous plants. We have received many kinds at Kew, and, either attached to pieces of wood or

merely suspended to the rafters in a warm and moist stove, they exhibit signs of life often for two or three years, but seldom longer, and they blossom very rarely. Many of them, we know, are extremely ornamental; and it is hoped that our stoves may be yet permanently adorned with their flowering specimens.

Descr. Tufted, stemless. *Leaves* four to six inches long, quite subulate, hoary with a minute scurfy pubescence, channelled, especially towards the base. *Scape*, including the spike of flowers, about as long as the leaves, almost entirely concealed with the beautiful, delicate, red, imbricated and sheathing *bracteas*. *Calyx* greenish-white. *Petals* quite white. *Filaments* of the stamens singularly undulato-crispate above the base.

Fig. 1. Flower, with its bractea. 2. Flower apart from the bractea. 3. Petal and two stamens. 4. Pistil :—*magnified.*

2. 3. 4.

Vincent Brooks, Imp

Tab. 5230.

PENTAGONIA Wendlandi.

Wendland's Pentagonia.

Nat. Ord. Rubiaceæ.—Pentandria Monogynia.

Gen. Char. Pentagonia, *Benth. Calycis tubo* turbinato vel tubuloso, cum ovario connato; *limbi* 5–6-fidi lobis persistentibus. *Corolla* supera, infundibuliformis vel tubulosa *tubo* tereti, limbo calycem longiore, extus glabro v. pilosiusculo, intus tomentoso vel pubescente; *limbi* 5- vel 6-fidi laciniis ovatis acutis, æstivatione valvatis. *Stamina* 5–6, infra medium tubi inserta, inclusa; *filamenta* filiformia; *antheræ* lineares. *Discus epigynus*, cupulæformis. *Ovarium* inferum, biloculare. *Ovula* plurima. *Bacca* ovata, calycis limbo coronata, corticata, pulposa.—Arbusculæ *Americæ tropicæ, inermes, robustæ;* ramis ramulis*que crassis, obtuse tetragonis;* foliis *oppositis, petiolatis;* petiolis *nudis, alatis v. auriculatis, integerrimis v. pinnatifidis, supra glabris subtus sæpe pubescentibus*, stipulis *utrinque solitariis, lanceolatis, acuminatis;* floribus *bracteatis*, corymbis *axillaribus, brevissime pedunculatis, multifloris, confertis;* calycibus corollis*que coloratis v. viridibus. Seem. in Bot. of H.M.S. Herald.*

Pentagonia *Wendlandi;* foliis brevissime petiolatis coriaceis obovato-lanceolatis acutiusculis basi rotundatis petiolatis crassis nudis, stipulis e lata basi ovatis anguste acuminatis, squamis glanduligeris 5 intus ad basin calycis tubi, ovario fimbriato, corolla tubuloso-suburceolata, staminum filamentis flexuosis inferne incrassatis pilosis.

Pentagonia macrophylla. *Wend. in Hort. Herenh.* (*non Benth.*)

This fine plant was sent to us at Kew by Mr. Wendland, under the name of *Pentagonia macrophylla* of Mr. Bentham, the author of the genus *Pentagonia* in his 'Botany of the Voyage of H.M.S. Sulphur,' p. 105. t. 39. That species (native of Panama) has a rather long slender petiole to the leaf, and the base of the leaf is acute and somewhat decurrent upon the petiole; the glandular scales are situated at the summit of the tube of the calyx, and the corolla is hypocrateriform. Dr. Seemann, during the voyage of H.M.S. Herald, added two more species to the genus, one he published in the Lond. Journ. of Bot. vol. ix. p. 566. t. 17 and 18, under the name of *P. pinnatifida*, remarkable for its pinnatifid leaves and the very large auricles at the base of the petioles; and the *P. Tinagita*, Seem. in Bot. of the Voy. *l. c.* p. 134. t. 28. This also has pinnatifid leaves, and

these so decurrent as to form a winged petiole; and if the figure is correct, the tube of the calyx is altogether destitute of glands within. The first species inhabits Palm-forests, in the province of Panama; the second is found in the territory of Darien, and the third in the province of Veraguas.

Our present plant is so different from all those, that I have no hesitation in considering it a new species, brought home by Mr. Wendland from his botanical and royal mission from the King of Hanover to Central America; but from what particular province I have at present no means of knowing.

With the accompanying figure, and the generic character above given, together with the differences here pointed out for distinguishing this from other species, any description is superfluous. Even a young plant, as ours is, makes a fine appearance with its dark-green and ample foliage: some of the leaves being a foot and a half long. The flowers are inconspicuous in comparison with the noble foliage: these flowers are produced in clusters from the axils of the upper leaves.

Fig. 1. Flower, with its pair of bracteas. 2. Calyx (with pistil), laid open and showing the glandular scales at the base of the tube. 3. Corolla, laid open, showing the stamens:—*magnified.*

W Fitch del. et lith.

Vincent Brooks Imp.

Tab. 5231.

CHENOPODIUM PURPURASCENS.

Purple Goosefoot.

Nat. Ord. Chenopodiaceæ.—Pentandria Digynia.

Gen. Char. Flores hermaphroditi, raro abortu fœminei, ebracteati. *Calyx* 5-fidus vel 5-partitus (interdum abortu 4- aut 3-partitus); *laciniis* concavis, sæpius longitrorsum carinatis, vel subcristato-carinatis, nunquam appendiculatis. *Stamina* 5, rarissime pauciora, imo calyce inserta. *Filamenta* filiformia. *Antheræ* ovatæ. *Staminodia* et nectarium nulla. *Ovarium* depresso-globosum. *Styli* 2 rarius 3 inferne coaliti, interdum liberi, subulati. *Stigmata* superficies interna stylorum. *Fructus* (*utriculus*) depressus, calyce clauso subgloboso aut subpentagono involutus; *pericarpio* distincto (raro semini adhærente), membranaceo, tenuissimo. *Semen* horizontale, lenticulare; *testa* crustacea, fragili. *Albumen* centrale, copiosum, farinaceum. *Embryo* perfecte aut imperfecte annularis, periphericus; *radicula* subcentrifuga.—Herbæ, *rarissime* suffrutices, *in temperatis utriusque hemisphærii indigenæ, pulvere farinoso conspersæ vel pubescenti-glandulosæ.* Folia *alterna, petiolata, raro sessilia, subtriangulari-rhomboidea, rarius ovata v. hastata, integerrima, dentata, aut pinnatifido-sinuata.* Flores *minuti, glomerulati, spicatim paniculati;* spicis *axillaribus et terminalibus;* glomerulis *raro axillaribus, haud spicatis. Moq. in De Cand.*

Chenopodium *purpurascens;* caule herbaceo erecto angulato ramoso, foliis tenuiter longeque petiolatis subpatulis rhombeo-ovatis obtusissimis mucronulatis tenuibus subpulverulentis obscure viridibus, demum purpureis, inferioribus auriculatis sinuato-dentatis, superioribus lanceolatis integerrimis, racemis compactis aphyllis, calyce fructifero perfecte clauso carinato-costulato, semine margine obtusissimo lævi haud nitido (albo). *Moquin.*

Chenopodium purpurascens. *Jacq. Hort. Vind. v.* 3. *p.* 43. *t.* 80 (*non Hamilt.*). *Moquin in De Cand. Prodr. v.* 13. *pars* 2. *p.* 66.

Chenopodium Atriplicis. *Linn. fil. Suppl. p.* 171.

β. lanceolatum; pauce farinosum, foliis omnibus sublanceolatis. *Moquin, l. c.*

γ. punctulatum; valde farinosum albo-punctatum, foliis rhombeo-ovatis vel lanceolatis. *Moquin, l. c.*

Chenopodium punctulatum. *Scop. Del. Insubr. v.* 1. *p.* 25. *t.* 11.

Chenopodium leucospermum. *Schrad. Ind. Sem. Hort. Gœt.* 1834, *p.* 2.

The several species of *Chenopodium*, or Goosefoot, are reckoned among the most weedy of plants, inhabiting roadsides and dunghills, with little to recommend them to notice by their beauty or economical usefulness, and few indeed are thought worthy of

cultivation. One sort, *Ch. Bonus-Henricus*, or Good King Henry, boiled, is a good substitute for spinach, and in some gardens is cultivated for the purpose. It is less generally known that its seeds are made use of in the manufacture of a substance formerly much in demand, *shagreen*. Another kind, the *Chenopodium Quinoa*, we have already figured in this Magazine, Tab. 3641, on account of the extensive use made of its seeds in Chili as an article of food, well known by the native name of "*Quinoa*." We now wish to recommend the present species as a hardy annual, well worthy of a place in any flower-border, on account of the fine red-purple colour of its stem, its inflorescence, and the variegated (green and purple) of the floral leaves. Our drawing was made in the very wet autumn of the past year, 1860, when the leaves did not attain the richness of colour which distinguishes them in more favourable seasons.

Its nearest ally is the *Ch. Quinoa* above mentioned, which, as may be seen by our figure of it, has a very dense terminal panicle, of flowers, by no means collected into separate glomerules as in the species before us. This attains a height of three to four feet, and flowers in the summer and autumn months. Both of these species have white seeds; and the foliage of both is said to vary in colour: the *Quinoa*, usually green, is sometimes purple or red, and *Ch. purpurascens*, of which the normal state is considered to be red-purple, is of a uniform green under some circumstances.

Fig. 1. Base of a stem with its leaf,—*nat. size.* 2. Flower. 3. Pistil:—*magnified.*



W.Fitch.del et lith.

Tab. 5232.

CUPHEA Jorullensis.

Jorullo Cuphea.

Nat. Ord. Lythrarieæ.—Dodecandria Monogynia.

Gen. Char. *Calyx* tubulosus, basi superiore gibbus, *limbo* ampliatus, dentibus 6 erectis, sinubus 6 nunc productis parvis, nunc obsoletis. *Petala* 6–7, inæqualia. *Stamina* 11–14, rarius 6–7, fauci calycis inserta, inæqualia. *Glandula* crassa sub ovario. *Stylus* filiformis. *Stigma* simplex aut subbifidum. *Capsula* membranacea, calyce obtecta, 1–2-locularis, demum bifidum, per placentam deflexam simul cum calyce fissa. *Semina* suborbiculata, compressa, aptera.—Herbæ *aut* suffrutices. Folia *opposita, rarius verticillata, integerrima.* Pedunculi *interpetiolares, uni- aut rarius multi-flori.* Flores *sæpius cernui.* Calyces *colorati.* Petala *violacea aut alba.*

Cuphea (§ Longifloræ) *Jorullensis;* suffruticosa, foliis lanceolatis scabris in petiolum breviusculum attenuatis, racemis foliosis in apice ramorum vel ramulorum, floribus subsecundis cernuis apetalis, calycibus magnis tubuloso-ventricosis striatis glanduloso-pilosis basi superne gibboso-calcarata, ore paululum dilatato 5-dentato longe piloso-glanduloso, dentium sinubus glandula viridi, filamentis valde inæqualibus styloque longe exsertis.

Cuphea Jorullensis. *H. B. K. Nov. Gen. Am. v.* 6. *p.* 164. *De Cand. Prodr. p.* 84.

Cuphea eminens. *Planch. et Lind. Fl. des Serres. Revue Hortic.* 1857, *p.* 151 (*reduced woodcut figure*).

Certainly the finest of all the known species of the numerous genus of *Cuphea*, with singularly large coloured calyces, for there are no petals; now well known in our gardens as a hardy greenhouse plant, and thriving in the summer in the open border, under the name of *C. eminens*, by which appellation it was sent from the extensive horticultural establishment of Mr. Linden; but it is assuredly the *C. Jorullensis*—a much older name—of Humboldt, native of Mexico (first detected, as its name implies, on the volcanic mountain of Jorullo). We have fine specimens in our herbarium from Mr. Bates, and Mr. Linden received it from M. Ghiesbrecht. It is nearly allied to the *Cuphea Melvilla* of Dr. Lindley in Bot. Reg. t. 852, of which I have copious native specimens from Brazil and British Guiana; but that has much broader leaves, flowers in leafless racemes, a calyx destitute of glands, and where the calyx in our plant is yellow that is green.

FEBRUARY 1st, 1861.

Descr. A somewhat shrubby perennial, one and a half to two feet high, a good deal branched, *branches* often red-purple *Leaves* opposite, three to five inches long, exactly lanceolate, entire, penninerved, rough to the touch on both sides, tapering below into a short footstalk. In vigorous plants the terminal branch becomes a long leafy *raceme* of numerous, axillary, drooping, large, apetalous, subsecund *flowers;* but copious lesser branches often develope themselves, and bear a few nearly terminal flowers, as represented in the figure given in the 'Revue Horticole,' the upper part of the plant then forming a racemose *panicle*. *Calyx* full an inch and a half long in some of our cultivated specimens, striated, glanduloso-pilose, tubular towards the base, and there, above, bearing a short, very obtuse spur, orange-red, but gradually passing into yellow towards the mouth; this latter is a little expanded, five-toothed, with a green gland in the sinuses, and a fringe of long hairs, each tipped with a gland. *Filaments* very unequal in length, exserted; *anthers* small. *Pistil* subovate, with a large flat *gland* at the base (corresponding with the spur), and a horse-shoe gland at the base of the style, which latter is also exserted; *stigma* obtuse, bifid.

Fig. 1. Lower leaf,—*natural size*. 2. Flower. 3. Pistil:—*magnified*.


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Tab. 5233.

CALOPETALON RINGENS.

Ringent Calopetalon.

Nat. Ord. Pittosporaceæ.—Pentandria Monogynia.

Gen. Char. Calopetalon, *J. Drum.* *Calyx* pentaphyllus, æqualis. *Petala* 5 (nunc 6–7), hypogyna, spathulata, unguibus curvatis in corollam subringentem conniventibus. *Stamina* 5, unguibus petalorum longiora; *filamenta* applanata, spathulata, apice acuminato-filiformia; *antheræ* oblongæ, introrsæ, biloculares, dorso prope basin affixæ, longitudinaliter dehiscentes. *Ovarium* breve stipitatum, tri-(bi-)loculare, *loculis* multiovulatis. *Stylus* filiformis; *stigma* simplex. *Capsula* . . .?—Suffrutex, *habitu* Marianthum *referens;* floribus *terminalibus, congestis, aureo-sanguineis, speciosis. Harvey.*

Calopetalon ringens. *J. Drum. in Harv. New Gen. of W. Australian Plants, in Hook. Kew Gard. Misc. v. 7. p.* 53. *Walpers, Ann. Bot. Syst. v.* 4. *p.* 242.

The remarkable structure of the filaments of the stamens of this plant is perhaps the chief ground for constituting a new genus of it. Our cultivated flowering samples at Kew did not exhibit any specially ringent character in the corolla, nor were the ovaries three-celled. It is one of Mr. James Drummond's discoveries in south-western Australia, and is a pretty greenhouse climber; but the flowers, though golden-red, have not the brilliancy necessary to render them showy. It flowered for the first time with us in November, 1860, having been reared from seeds sent by Mr. Burges from Swan River. At a more favourable season of the year the colour may be more vivid.

Descr. A branching and twining *climber*, with slender *stems*, and distant, alternate, oblong-ovate, shortly acuminate, penni-veined, quite entire *leaves*, three to four inches long, acute at their base. *Petiole* about two inches long. *Peduncle* terminal (in fact the continuation of a branch), bearing a many-flowered *corymb*, with small *bracteas* on the pedicels. *Calyx* of five, ovate, acute, small, green *sepals*. *Corolla* of five golden-red *petals*, with broad, erect *claws*, placed so close and so erect as to form a tube, while the *laminæ*, which are ovate and very acute,

are spreading, so as to constitute a *limb*. *Stamens* four. *Filaments* as long as the claws, broad, spathulate, with an elevated central line on each face, terminating in a sudden contraction, so that the yellow *anther* is borne on the filiform apex. *Ovary* oblong, on a thick gland or stipes, two-celled, with many *ovules* in two rows in each cell. *Style* filiform. *Stigma* obtuse.

Fig. 1. Flower. 2. Stamens, including the pistil. 3. Stamen, seen from its inner face. 4. Pistil. 5. Transverse section of the ovary :—*magnified.*



Vincent Brooks, Imp.

Tab. 5234.

PUYA grandiflora.

Large-flowered Puya.

Nat. Ord. Bromeliaceæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4991.)

Puya *grandiflora ;* caule subelongato robusto cicatricato, foliis numerosissimis e lata basi lingulato-subulatis coriaceo-firmis canaliculatis supra viridibus subtus canescentibus marginibus grosse atro-spinosis, spinis subulatis, carina etiam spinosa, pedunculo elato, panicula elongata pluriflora laxa, ramis calycibus bracteisque extus dense ferrugineo-pannosis, petalis basi intus bisquamatis albo-virescentibus 4–5-uncialibus sepalisque falcato-decurvis.

This is certainly among the most striking among Bromeliaceous plants. We received it many years ago, at the Royal Gardens, from Real del Monte, in Mexico. The height of the flowering plant is little short of twelve feet. In some respects it agrees with the description of *Pitcairnia ferruginea*, a Peruvian plant of Ruiz and Pavon, especially in the character "floribus falcato-recurvis," and in the "pedicellis calycibusque ferrugineo-tomentosis ;" but the petals are there purplish and scaleless, and the flowers only two to three inches long. Still, I take it the two plants must be nearly allied ; yet it is very difficult to define satisfactorily Bromeliaceous plants without the aid of figures.

Descr. *Stem* as thick as a man's leg, 2–3 feet long, rough from the remains of the bases of former years' leaves, simple or branched. *Leaves* very numerous, terminal on the stem or branch, two to three feet long, recurved, from a broad base, ligulato-subulate, very much and finely acuminate, hard-coriaceous, dark-green above, whitish and hoary beneath, channelled, the margin beset with large, hard, subulate, subfalcate, black, very pungent *spines*. *Keel* beset with whitish spines. *Peduncle* or *scape* five to six feet long, stout in proportion, bracteated with subulate leaf-like *bracts*. *Panicle* longer than

the scape, ovate in circumscription; the *rachis*, *branches*, *pedicels*, *calyx*, and large, ovate *bracteas*, densely clothed with thick, rusty-coloured tomentum. *Pedicels* much longer than the bracts. *Flowers*, in bud, almost subulate, curved downwards, resembling the beak of a bird; when arrived at full maturity, five and rather more inches long. *Sepals* two to two and a half inches long, lanceolate, acuminate, and, as well as the oblong-linear, obtuse, greenish-white *petals*, erecto-patent, all decurved. There are two large scales at the base of the petals. *Stamens* shorter than the corolla, lodged in the upper canaliculate petal. *Ovary* oblong, obtusely trigonal, free. *Style* longer than the stamens. *Stigmas* three, spirally twisted.

Fig. 1. Much reduced figure of *Puya grandiflora*. 2. Petal, with its scales at the base. 3. Pistil:—*natural size*.



Vincent Brooks, Imp

Tab. 5235.

ÆCHMEA Melinonii.

Copious-flowered Æchmea.

Nat. Ord. Bromeliaceæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4293.)

Æchmea *Melinonii;* foliis ligulatis depresso-striatis unicoloribus viridibus (efasciatis) marginibus spinuloso-dentatis apice spinoso-mucronatis, bracteis inferioribus lanceolato-acuminatis membranaceis marcescentibus, floribus subsessilibus in paniculam densam ovatam multifloram congestis, bracteolis caducis, calycibus ovario adhærentibus oblongo-cylindraceis, lobis pallidioribus brevi-mucronatis, petalis calyce brevioribus roseis.

Æchmea Melinonii. *Hort. Makoy.*

We here figure another South American *Æchmea*, received from Mr. Makoy, in 1857, under the appellation we have here adopted, but the origin of the specific name we do not know. It will be seen to be nearly allied to our *Æchmea discolor*, figured at Tab. 4293 of this work, differing however from it in several essential points. The leaves are here quite uniform in colour. The thyrsus is more densely crowded with flowers. The ovary is much more elongated, the lobes of the calyx are clearly mucronated, and the scales of the petals are more deeply fringed at the apex. Although the present is a very handsome species, and the flowers much more numerous, it lacks the rich coral-red of the rachis and calycine tubes of *Æ. discolor*, and the fine contrast occasioned by the black-purple tips to the flowers, which led us to compare the unexpanded buds of that species to the well-known beads called "*crabs' eyes*," the seeds of *Abrus precatorius*.

Descr. *Leaves* all radical, one to two feet long, ligulate, firm-coriaceous, dark-green, striated and somewhat furrowed at the striæ, the margin spinuloso-serrate, the apex spinoso-mucronate, the base, as is usual in the genus, dilated and convoluted almost into a tube. *Scape* a foot high, dirty-brown. *Flowers* numerous, sessile or subpedicellate, arranged in a dense, thyrsoid *pa-*

nicle, bearing a few, large, lanceolate, acuminate, marcescent, brownish *bracts* at the base; *bracteoles* very caducous; *rachis* and *branches* stout, dark-purple. *Calyx* half an inch to three-quarters of an inch long, cylindrical or subclavate; the *tube*, which is adnate with ovary, scarlet; the *limb* of three, oval, pink-coloured lobes, each distinctly mucronate and very concave. *Petals* obovato-spathulate, obtuse, concave, pink: at the base of the petals within are two white, oblong, membranaceous *scales*, fringed at the apex. *Stamens* six; *filaments* dilated upwards: *anthers* oblong, submucronate. *Style* filiform, shorter than the corolla: *stigma* small, trifid.

Fig. 1. Thyrsus and portion of a leaf,—*natural size*. 2. Flower. 3. Petals, with their two scales and two stamens. 4. Calyx, laid open, showing the style: —*more or less magnified*.



2.

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W Fitch, del et lith

Vincent Brooks, Imp.

Tab. 5236.

COLEUS inflatus.

Inflated Coleus.

Nat. Ord. Labiatæ.—Didynamia Gymnospermia.

Gen. Char. Calyx ovato-campanulatus, fructifer, declinatus vel reflexus, rarius suberectus, *fauce* intus nuda vel hispida, quinquedentatus vel bilabiatus, dente supremo ovato-membranaceo, marginibus rarius decurrentibus, inferioribus angustioribus, omnibus acutis vel lateralibus ovato-truncatis, 2 infimis inter se connatis. *Corolla* tubo exserto declinato, decurvo vel sæpius defracto, *fauce* inflata vel æquali, *limbo* bilabiato, *labio* superiore abbreviato obtuse 3–4-fido, *inferiore* integro elongato concavo, sæpius cymbiformi genitalia involvente. *Stamina* 4. *Filamenta* edentula, basi in tubum stylum vaginantem connexa. *Stylus* apice subulatus, æqualiter bifidus. *Nuculæ* subrotundæ, compressæ, læves.—Herbæ *annuæ vel basi perennantes, rarius frutices.* Verticillastri 6-*flori vel sæpius multiflori, nunc densissimi, nunc laxi, cymbiformes, pedunculo communi utriusque cymæ ramisque utrinque binis plus minusve elongatis.* Folia *floralia bracteæformia, ante anthesin ad apicem racemorum plus minusve comosa, per anthesin decidua vel rarius subpersistentia, reflexa.*—*Species pleræque* Asiaticæ, *perpauce* Africanæ. *Benth.*

Coleus (§ Longiflori) *inflata;* glaber vel ad venas foliorum tenuiter pubescens, foliis petiolatis amplis ovatis acuminatis dentatis basi longe angustatis, floralibus deciduis, racemis subramosis, verticillastris irregulariter cymæformibus, pedunculo communi utrinque subnullo, ramis alternis vel omnibus elongatis, pedicellis abbreviatis. *Benth.*

Coleus inflatus. *Benth. Labiat. p.* 58, *et in De Cand. Prodr. v.* 12. *p.* 79.

Plants of this were raised at Kew from seeds sent to us by Mr. Thwaites from Ceylon, where only it is a native. It was originally detected there by Mr. Macrae and Mrs. General Walker. It is possessed of little beauty or attraction, but flowering, as it has hitherto done with us, in December, its delicate spikes of lilac flowers help to enliven the plant-houses at that dreary season. Forty species of this Labiate genus are enumerated by Mr. Bentham, the majority of them inhabiting eastern India.

Descr. Our plants of this attain a height of nearly three feet, with square stem and branches; the base of the stem scarcely woody, often tinged with orange-colour and spotted with red, the rest green. *Leaves* upon long petioles, and, including the

petioles, a span or more long, in distant, opposite pairs, ovate, sharply acuminated, very coarsely serrated, penniveined, and reticulated. *Spike* of *flowers* compound, subracemose; *bracteal leaves* very small. *Calyx* at first small, two-lipped, upper lip erect, large, lateral and inferior teeth small: the calyx in fruit becomes inflated, whence the specific name. *Corolla* with the long, slender *tube* singularly bent at an angle; the *limb* two-lipped, spread open like the mouth of a snake. *Ovary* four-lobed, set upon a large fleshy *gland*, with a blunt spur-like projection on one side.

Fig. 1. Flower. 2. Calyx and pistil. 3. Mouth of the corolla. 4. Ovary and its fleshy receptacle:—*all more or less magnified.*

Vincent Brooks, Imp

Tab. 5237.

IMPATIENS Walkeri.

Red-flowered Balsam.

Nat. Ord. Balsamineæ.—Pentandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4615.)

Impatiens *Walkeri*; erecta glabra subramosa, foliis longe petiolatis oblongo-lanceolatis basi apiceque attenuatis serratis, serraturis setigeris, petiolis eglandulosis, pedunculis versus caulis apicem axillaribus folia subæquantibus apice racemoso-plurifloris, racemo subcorymbiformi, bracteis persistentibus, pedicellis gracilibus elongatis erectis, sepalis lateralibus deltoideo-ovatis, anteriore adscendente ventricoso-infundibuliformi in calcar conico-subulatum incurvum subito attenuato ore contracto cum calcare petalis profunde bilobis subtriplo longiore, capsula glabra utrinque attenuata.

Impatiens Walkeri, *Hook. in Arn. New Sp. of Indian Balsams, in Hook. Comp. to Bot. Mag. v.* 1. *p.* 234. *t.* 18. *Walp. Repert. Bot. v.* 1. *p.* 471. *Thwaites, Enum. Pl. Zeyl. p.* 66.

This beautiful *Balsam*, of which no figure has yet been given, save that above quoted, and taken from a dried specimen, was first detected by General Walker, after whom we had named it, between Rambodde and Neuri-Ellia, Ceylon; and it has since been found by Mr. Thwaites in the Central Province of the same island. We owe the possession of it in the stove of Kew to the last-mentioned gentleman, who favoured us with seeds; and plants raised from them produced copious flowers in the winter months. Its nearest affinity is perhaps with the *I. Jerdoniæ*, figured in our Tab. 4739.

Desch. The *stem* is simple or but little branched, one foot or a foot and a half high, erect, succulent, deep-purple. *Leaves* between three and four inches long, petioled, scattered, ovate or ovato-lanceolate, acuminate, deep-green, penninerved, tapering at the base, the margins serrated and tipped with a soft green bristle; those setæ near the base of the leaf tipped with a gland. *Peduncles* from axils of the terminal petioles, erect, corymboso-paniculate; *pedicels* long, slender, filiform, bearing subulate *bracts* at their base. *Flowers* from an inch and a quarter to an

inch and a half long, scarlet, except two small green outer *sepals*: the *anterior sepal* gives the peculiar form to this singular flower, and is somewhat pitcher-shaped, elongated, contracted below the mouth, attenuated at the other extremity into a conical, subulate, incurved *spur*.

Fig. 1. Side view; and 2, front view of a flower:—*magnified*.

5238



W Fitch, del. et lith.

Tab. 5238.

POLYGONUM Chinense; *foliis pictis.*

Chinese Buck-wheat; painted-leaved.

Nat. Ord. Polygonaceæ,—Octandria Trigynia.

Gen. Char. (*Vide supra*, Tab. 4622.)

Polygonum (§ Cephalophilon) *Chinense;* caule erecto (vel decumbente) ramoso, foliis ovatis oblongisve, auriculis foliaceis ad basin petioli reniformibus deciduis, corymbo simplici vel paniculato, pedunculis piloso- vel glanduloso-scabriusculis dichotomis trifidisve, bracteis foliaceis cordatis suffultis, floribus 5-fidis octandris hemitrigynis, achenio triquetro. *Meisn.*

Polygonum Chinense. *Linn. Sp. Pl. p.* 520. *Willd. Sp. Pl. v.* 2. *p.* 453. *Roxb. Fl. Ind. v.* 2. *p.* 283. *Hook. et Arn. Bot. of Beech. Voy. pp.* 208, 269. *Wight, Ic. Pl. Ind. Or. v.* 5. *t.* 1806. *Babingt. in Linn. Trans. v.* 18. *p.* 109. *Meisn. in Wall. Pl. Asiat. Rar. v.* 3. *p.* 60, *et in De Cand. Prodr. v.* 14. *pars* 1. *p.* 130.

Ampelygonum Chinense. *Lindl. in Bot. Reg.* 1828; *Misc. p.* 113.

Polygonum, brachiatum, *Poir.*, P. corymbosum, *Willd.*, P. auriculatum, *Meisn.*, *and* P. cymosum, *Roxb.*, *are all referred hither by Meisner; as well as certain synonyms which he brings under some of his following varieties:*—α. Thunbergianum.—C. densiflorum, *Bl.*—β. scabrum.—γ. ovalifolium. Coccoloba Indica, *Hb. Wight.*—δ. brachiatum. P. patens, *Don.* P. asperum, *Bl.*—ε. intermedium.—ξ. subhastatum.—η. corymbosum.

Var. *pictum;* foliis variegatis. (Tab. Nostr. 5238.)

A native of China and Japan, as well as of almost all parts of the East Indies, and, like many other plants that are of extensive geographical distribution, this exhibits considerable variations in the form and size of the leaf, and with inflorescence sometimes in simple, sometimes in panicled heads, or corymbs. The ordinary state of the plant, which was introduced to the Royal Gardens of Kew, by Sir George Staunton, Bart., in 1795, as a "hardy annual," is perhaps too much like our native Buck-wheat, to be valued in our gardens. But we have lately come into possession of a state with variegated leaves, which is really worthy of cultivation as a greenhouse plant, for, in the open air, it can only be treated as annual. Some leaves are purple on the same stem with the green ones: and both are marked with broad, white lines, taking the shape of the letter V, margined

in the inside with a dark line of deep purple or blackish-green.

This species moreover possesses the valuable property in India, of yielding a colouring matter of fine quality resembling Indigo, a property, however, which it has in common with *Polygonum tinctorium*, now "extensively cultivated in Belgium as a domestic substitute for the tropical indigo," and said to produce the dye in the greatest abundance, and of the finest quality.

It will be seen by our figure 3, that the ovary is sunk in a cavity of the thick fleshy tube of the calyx. As this ovary advances to maturity, the calyx closes over it, and forms a part of the fruit with its fleshy covering, so that Dr. Wight and others had referred the species to the genus *Coccoloba*. Dr. Lindley made it the type of a new genus *Ampelygonum*, but it is not generally adopted.

Fig. 1. Portion of the stem, and leaf, showing the ochrea and stipules,—*natural size*. 2. Flower,—*magnified*. 3. Vertical section of a flower,—*more magnified*.



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Vincent Brooks, Imp.

Tab. 5239.

GUSTAVIA pterocarpa.

Wing-fruited Gustavia.

Nat. Ord. Myrtaceæ: *Tr.* Barringtonieæ.—Monadelphia Polyandria.

Gen. Char. (*Vide supra*, Tab. 5069.)

Gustavia *pterocarpa;* floribus hexapetalis albis, calycis subalte 5–6-lobo, lobis limbo rotundatis pedunculoque pubescentibus, ovario pentaptero, foliis coriaceis longo-petiolatis obovato-lanceolatis acuminatis obsoletissime crenatis, stylo elongato.

Gustavia pterocarpa. *Poiteau, Mém. du Mus. v.* 13. *p.* 158. *t.* 13. *De Cand. Prodr. v.* 2. *p.* 290.

Gustavia Leopoldi. *Cat. Hort. Lind.* (*name only*).

Among the most desirable of tropical American plants for introduction to our stoves are assuredly the large-flowered, large-foliaged, and evergreen trees and shrubs almost peculiar to those regions, among which the several species of the genus *Gustavia*, *L.* (Pirigara, *Aubl.*), rank pre-eminent. Mr. Linden, the distinguished horticulturist and botanical traveller (recently, we believe, attached to the Société Impériale Zoologique d'Acclimatation of Paris), has had the honour of importing two species, both of which have already flowered in our stoves at Kew. One we have already figured at our Tab. 5069, the *Gustavia insignis* of Linden (but which a further examination leads me to believe is identical with *Gustavia urceolata*, Poit., *Bois puant* of French Guiana, differing only in the slightly greater development of the calyx), and the almost equally beautiful species now before us. This, though named by Linden in his Catalogue *G. Leopoldi*, is assuredly the *G. pterocarpa* of Poiteau, in his Mémoire sur les Lécythidées, published in the thirteenth volume of the "Mémoires du Muséum d'Histoire Naturelle," p. 158, and figured at plate 6, from specimens in their native locality on the banks of the river Mana, French Guiana; afterwards found in a dis-

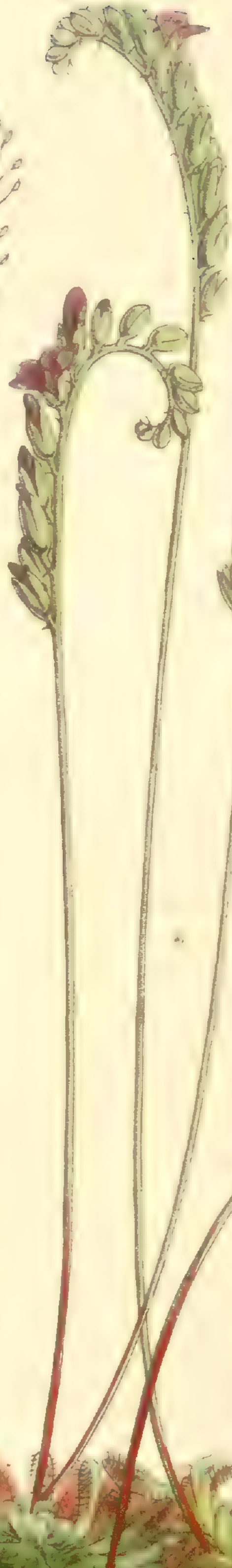
trict called Rowra. This figure perfectly accords with our plant. The winged ovary, or fruit, is alone sufficiently characteristic of the species.

Besides the winged ovary, this differs from *G. insignis* (or, as I believe, *G. urceolata*) by the smaller and more coriacous, nearly quite entire foliage, the smaller and white flowers, and the comparatively large calycine lobes. Both have fragrant flowers, and both yield a fetid odour on cutting into the wood. *G. urceolata* is common in savannahs and in the forests of French Guiana, and is said to attain a height of forty feet: its wood much used for hoops for casks. *G. pterocarpa*, M. Poiteau says, attains a still larger size.

Fig. 1. Leaf,—*natural size*. 2. Portion of the stamens. 3. Winged calyx and pistil:—*magnified*.



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Tab. 5240.

DROSERA spathulata.

Spathulate Sundew.

Nat. Ord. Droseraceæ.—Pentandria Tri-(Penta-)gynia.

Gen. Char. Calyx 4–8-partitus. *Petala* 4–8, marcescentia. *Stamina* 4–8, hypogyna v. leviter perigyna, *antheris* basifixis immobilibus, *connectivo* sæpius conspicuo. *Ovarium* 1-loculare, 2–5-merum; *ovulis* pluribus v. paucis, secus margines (haud introflexos) carpellorum acervatim v. sæpius conferte pluriseriatim affixis, infimis pendulis, supremis sæpius ascendentibus, intermediis peritropis. *Styli* 3–5, ima basi semper cohærentes, *placentis* alterni, simplices v. sæpius ad basim bipartiti, cruribus integris varie lobulato- v. inciso- v. flabellato- v. penicillato-divisis, divisuris undique v. tantum apice clavato- v. capitato-stigmaticis. *Capsula* calyce marcescente stipata, 3–5-valvis; *valvis* medio seminiferis (singulæ e dimidia parte carpellorum duorum adjacentium constantes); *placentis* linearioblongis v. orbicularibus v. obsoletis; *substantia* pericarpii nunc uniformiter chartacea, nunc inferne membranacea, superne conspicue et abrupte crassiore.—Herbæ *perennes, cosmopolitanæ, in regionibus tropicalibus raræ, extra Capricornum imprimis in Australia frequentiores, iisque formas mirificas induentes;* foliis *super* (D. Arcturi *excepto*) *vernatione circinatis, pilis glanduliferis ornatis. Planch.*

Drosera (§ Ros-Solis) *spathulata;* foliis omnibus radicalibus spathulatis, in petiolum limbo breviorem sensim angustatis, supra breviter glanduloso-piliferis, subtus sparse villosiusculis, ciliis marginalibus longis, stipulis in unam trifidam, laciniis trifidis concretis, scapis ascendentibus glanduloso-puberulis v. glabrescentibus 5–20-floris, pedicellis fructiferis secundis approximatis calyce brevioribus, laciniis calycinis subspathulatis obtusiusculis v. acutis, dorso puberulis, stylis 3 e basi bipartitis, stigmatibus subclavellatis seminibus ellipsoideis, testa solida minute tuberculata. *Planch.*

Drosera spathulata. *Lab. Nov. Holl. v.* 1. *t.* 106. *f.* 1. *De Cand. Prodr. v.* 1. *p.* 318. *Planchon, in Ann. Sc. Nat. 3rd ser. v.* 9. *p.* 193. *Hook. Fl. N. Zeal. v.* 1. *p.* 20; *Fl. Tasman. v.* 1. *p.* 29.—D. propinqua, *All. Cunn.*

This lovely species of *Sundew* came, apparently accidentally, in the soil of a Wardian case, sent by Mr. Milne, our collector, in Captain Denham's surveying voyage of H.M.S. Herald, from Australia. It was first detected in Tasmania by Labillardière, but appears to be frequent in New South Wales, in south-eastern Australia, in New Zealand; and M. Planchon refers Cuming's Philippine Island *Drosera* (n. 857) to this species. It is excessively pretty in its mode of growth, and may be easily recognized, as Dr. Hooker observes, by the "broadly spathulate,

rosulate leaves, spreading out like rays, and by the long slender erect scapes, bearing a secund raceme of small flowers," but conspicuous by their deep purple colour. M. Planchon, in his admirable monograph above quoted, enumerates no less than eighty-eight species of this singular genus, which has its representatives in almost every temperate and warm country throughout the world. We have cultivated this species very successfully for several years in a warm greenhouse.

Fig. 1. Upper, and 2, under side of a leaf. 3. Pedicellate gland, from the same. 4. Flower. 5. Stamens and pistil :—*all more or less magnified.*

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W. Fitch del. et lith.

Vincent Brooks, Imp

Tab. 5241.

CISTUS vaginatus.

Sheath-leaved Cistus.

Nat. Ord. Cistaceæ.—Polyandria Monogynia.

Gen. Char. Calyx. 5-sepalus; *sepalis* duplici serie dispositis, 2 externis inæqualibus, interdum nullis. *Petala* 5, æqualia, subcuneata, caduca. *Stamina* ∞ sæpe e disco glanduloso exserta. *Stylus* filiformis. *Stigma* capitatum. *Capsula* calyce obtecta, 10–5-locularis, valvis 10–5, medio septiferis. *Semina* ovato-angulata. *Embryo* filiformis, spiralis.—Frutices, suffruticesve. Folia *opposita, exstipuluta, integra vel subdenticulata.* Pedunculi *axillares, uni- aut multi-flori. De Cand.*

Cistus (§ Erythrocistus) *vaginatus;* foliis lanceolatis acutis trinerviis hirsutis subtus reticulatis petiolatis, petiolis basi dilatatis margine pilosis sulcatis vaginantibus, pedunculis axillaribus 1–8-floris.

Cistus vaginatus. *Ait. Hort. Kew. ed.* 1. *v.* 2. *p.* 232, *ed.* 2. *v.* 3. *p.* 304. *Jacq. Hort. Schœnbr. v.* 3. *p.* 17. *t.* 28. *Bot. Reg. t.* 225. *Sweet, Cistin. t.* 9. *De Cand. Prodr. v.* 1. *p.* 265.

Cistus symphytifolius. *Lam. Encycl. v.* 2. *p.* 15.

Rhodocistus Bertholletianus. *Spach, Veget. v.* 6. *p.* 83, *and in Webb, Phytogr. Canar. v.* 1. *p.* 125. *t.* 12.

β. leucophyllus, Spach, l. c.; foliis vix pilosis, subtus præsertim ramulisque et calyce speciosissime cinereo-tomentosis, ovario toto tomentoso.

Cistus candidissimus. *Don, in De Cand. Prodr. v.* 1. *p.* 264. *Sweet, Cistin. t.* 3.

Cistus ochreatus. *Link, in Buch. Beschr. Canar. Ins. p.* 153.

It is much to be regretted, that many very handsome and easily cultivated plants, introduced to our gardens eighty and a hundred years ago, are neglected and lost, in favour of new plants which fall far short of them in point of beauty. The present is one among that number, a native of Teneriffe, cultivated at Kew so long ago as 1779, when seeds were sent by Frederic Masson, and now scarcely to be found in collections at the present time, save in that of W. Wilson Saunders, Esq., at Reigate, a place rich in rare plants of Teneriffe. To that island it is quite peculiar, growing in Pine-woods and Cistus-scrubs ("in Pinetis et Cisticetis") according to Mr. Webb, at elevations upon the moun-

tains of from 1800 to 9000 feet. The flowers are particularly large and handsome, and there is a very distinct character in the union of the bases of the petioles into a very conspicuous elongated striated sheath, surrounding the branch, whence the specific name is derived. Our drawing was made at Reigate, in June 1860, when the plant was in great beauty.

Descr. A *shrub*, three to four feet high, with hairy and viscid *stems* and *branches*. *Leaves* opposite, broad-lanceolate, very acute, nearly entire, three-nerved, reticulated (and rugose beneath) very hairy, almost felted; *petioles* united for a considerable portion of the length into a compressed striated very hairy *sheath*. *Upper leaves* small and bracteiform. *Peduncles* axillary, cymose, one- to eight-flowered. *Flowers* large, drooping. *Petals* singularly plicate or crisped, full rose-colour, yellowish at the base. *Stamens* very numerous, collected into a cup around the pistil. *Ovary* subglobose, arising from a crenulated fleshy disk. *Style* long, subflexuose. *Stigma* capitate.

Fig. 1. Leaf, with sheathing base,—*nat. size*. 2. Pistil,—*magnified*.

W Fitch, del. et lith

Vincent Brooks, Imp

Tab. 5242.

ZAMIA Skinneri.

Mr. Skinner's Zamia.

Nat. Ord. Cycadaceæ.—Diœcia.

Gen. Char. Flores masculi: *Antheræ* apertæ, in strobilos terminales pedunculatos collectæ, undique rachi communi insertæ, singulæ ovoideæ, basi in stipitem attenuatæ, apice incrassato peltiformi subbilobæ, lobis subtus polliniferis. Flor. Fœm.: *Carpidia* plurima, monophylla, aperta, in strobilos terminales pedunculatos collecta, rachi communi undique inserta, singula basi in stipitem attenuata, apice in peltam hexagonam dilatata, pelta subtus utrinque ovulo unico inverso fœta. *Fructus* e carpidiis subdiscretis. *Semina* ovoideo-subglobosa; *testa* ossea, epidermide tenuiter carnosa cincta. *Embryo* inversus, in axi albuminis carnosi, *radicula* respectu racheos communis centripeta.—Arbuscula *in America tropica, imprimis in Indiæ Occidentalis Insulis obviæ;* frondibus *pinnatis;* pinnis *basi calloso-constrictis, multinerviis;* nervis *simplicibus indivisis. Endl.*

Zamia *Skinneri;* caudice erecto tereti cicatricato; frondibus paucis erecto-patentibus longe stipitatis pinnatis, stipitibus teretibus (rachibusque) aculeatis basi valde incrassatis, pinnis 7–11 oppositis vel alternis remotis obovato-ellipticis coriaceis nitidis parallelo-multinerviis subito acuminatis dimidio superiore spinuloso-serratis basi attenuatis sessilibus, strobilis (masculis) 3–4-aggregatis pedunculatis cylindricis pubescentibus ferrugineis basi multibracteatis, squamis antheriferis subpeltatis, antheris subglobosis basi paululum attenuatis semibivalvibus.

Zamia Skinneri. *Warszew. in Otto et Dietrich Garten Fl. v.* 19. *p.* 146, *cum ic. Bot. Zeit.* 1854, *p.* 27. *Seemann, Bot. of Herald, p.* 202.

We received plants of this very distinct species of *Zamia* from the eminent cultivator Mr. Borsing, of Berlin. It appears to have been first detected at Veraguas, Isthmus of Panama, by M. Warszewicz. Dr. Seemann subsequently found it in the Isthmus of Darien, at Cape Corrientes, and a specimen from him without fructification is in the Hookerian herbarium. It appears to be described and figured by Warszewicz in the journal of Otto and Dietrich above quoted, but whether or not any fructification is noticed I am ignorant, as I have not the opportunity of seeing the work. I should think not, for in the brief specific character copied into the Bot. Zeitung, no mention is made of it. We have been more fortunate; for our plants in the stove of the Royal Gardens

of Kew produced a cluster of male strobili, which by their form and colour added greatly to the interest and beauty of the plant. It is the most distinct of all the species of *Zamia* known to us.

Descr. *Caudex* or *trunk* of our largest plant erect, eighteen inches high, six to eight in circumference, scarred transversely from the fallen fronds. *Fronds* three to three and a half feet long, including the stipites, few (five to six), erect, patent, pinnated. *Stipites* long, two to three feet, aculeate (as is the rachis), subterete, grooved in front, singularly incrassated at the base. *Pinnæ* few, seven to eleven, distant, opposite or alternate, nine to fourteen inches long, four inches broad, coriaceous, elliptical-obovate, suddenly acuminate, spinuloso-serrated towards the apex, attenuated, sessile, and subdecurrent at the base, the surface very glossy, closely striated with parallel *veins*. *Male* five to six inches long, an inch and upwards broad, pedunculate, rich tawny brown, downy, cylindrical, subacute, formed of copious subcuneate coriaceo-carnose *scales*, peltate and subhexagonal at the summit, bearing, in two depressions on the under side, the subglobose two-lipped *anthers*.

Fig. 1. Very much reduced male plant. 2. Cluster of male catkins, and 3. Single leaf and portion of the rachis:—*nat. size*. 4, 5, and 6, different views of the anther-bearing scales,—*magnified*.

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W Fitch, del et lith.

Vincent Brooks, Imp.

Tab. 5243.

CONVOLVULUS Mauritanicus.

Mauritanian Bindweed.

Nat. Ord. Convolvulaceæ.—Pentandria Monogynia.

Gen. Char. Sepala 5. *Corolla* campanulata. *Stylus* 1. *Stigmata* 2, linearicylindrica, sæpe revoluta. *Ovarium* biloculare, biovulatum. *Capsula* bilocularis.—Herbæ *aut* suffrutices. *De Cand.*

Convolvulus *Mauritanicus;* totus pallide (breviter) hirsutus, radice perenni sublignosa multicauli, caulibus non volubilibus prostratis foliosis parte superiori breviter ramosis, foliis omnibus ovatis obtusis mucronulatis breviter petiolatis, floribus 1–2 ad ramorum extremitatem sitis pedicello calycem subæquante suffultis, bracteis linearibus calycem æquantibus, sepalis lanceolatis acutis hirsutis longe ciliatis corolla rosea vel violacea triplo brevioribus. *Boiss.*

Convolvulus Mauritanicus. *Boiss. Plantes d'Espagne, p.* 418. *t.* cxxii. A.

A very pretty and little known species of *Convolvulus*, detected in the interior of northern Africa, near Constantine, communicated to M. Boissier by M. Séjourné, and published in a note in the botany of M. Boissier's interesting 'Voyage en Espagne.' It is distinguished from *C. Siculus* and *C. pentapetaloides* by its woody and perennial root, its leaves never cordate, shortly petiolate, and by the size of its flowers: from *C. tricolor* by some of the same characters, the leaves not attenuated upon the petioles, its many-flowered peduncles, the length of the bracteæ and of the sepals. The *C. suffrutricosus*, Desf., and *C. Cantabrica*, L., which are also perennial, have the leaves lanceolate or linear, the peduncles much elongated, etc.

Our flowering specimen was received from the garden of Mr. William Thompson, of Ipswich, where it blossomed in the open air, in October 1860.

Descr. *Root* perennial, sublignose, branched, about the thickness of a goose-quill. This throws out several slender, almost filiform, prostrate, flexuose *stems*, which are simple,

rarely branched; these are pilose with short, soft, white hairs, as is almost every part of the plant, scarcely perceptible to the naked eye. *Leaves* alternate, distichous, on short *petioles* two lines long, suborbicular (especially below) or ovate, obtuse or acute, one to one and a half inch long. *Peduncles* axillary, solitary, one- to three-flowered, twice or more longer than the leaves, slender, filiform, bibracteate at the setting-on of the pedicels, and the intermediate flower has two *bracteoles*, all of them linear, patulous. *Calyx* of five, linear-oblong, villous *sepals*, two a little smaller than the rest. *Corolla* twice as long as the calyx; the *limb* patent, nearly entire, purplish-blue; the *faux* or *tube* white. *Stamens* included. *Filaments* subulate, pubescent at the base, two longer than the rest. *Anthers* oblong. *Ovary* ovate, seated on a fleshy *disk*, tapering into a slender, filiform *style*, with two very slender, linear *stigmas*.

Fig. 1. Calyx, including the pistil. 2. Base of the corolla open, with stamens. 3. Pistil:—*magnified.*



W Fitch del et lith

Vincent Brooks Imp

Tab. 5244.

BELOPERONE VIOLACEA.

Violet-flowered Beloperone.

Nat. Ord. Acanthaceæ.—Diandria Monogynia.

Gen. Char. Calyx profunde quinquefidus ; *laciniis* æqualibus, latis v. latiusculis ; *tubo* angusto. *Corolla* ringens, *tubo labioque* superiore concavo-conicis, rectis, inferiore labio trifido æquali, disco lævi. *Stamina* duo, tubo infra medium inserta. *Antheræ* biloculares ; *loculis* basi calcaratis, in connectivo semisagittato-ovali oblique distantibus, altero altiore. *Stigma* subulatum (in specie anomala obtusum). *Capsula* a basi ad medium compresso-unguiculata, asperma, apice tetrasperma. *Semina* colorata.—Frutices *Americæ tropicæ* (*rarius* herbæ) *speciosi ;* corollis *elongatis, purpureis vel cæruleis ;* bracteis *sæpe coloratis.* Spicæ *axillares terminalesque, breves, secundæ.* Flores *alterni ;* bracteis *patulis bracteolisque sæpe æqualibus, longis, linearibus lanceolatisve. Nees.*

Beloperone *violacea ;* suffruticosa, ramis herbaceis glabris ad nodos incrassatis, foliis brevi-petiolatis ovatis acuminatis integerrimis pilosulis ciliolatis, floribus terminalibus capitatis bracteatis, bracteis oblongo-lanceolatis patentibus foliaceis viridibus calyce brevioribus, calycis profunde 5-partitis, laciniis æqualibus oblongis erectiusculis integerrimis ciliatis, corolla calyce subquadruplo longiore speciosa purpurea, labio inferiore amplo pulcherrime albolineato.

Beloperone violacea. *Planch. et Lind. Hort. Linden, n.* 5.

The genus *Beloperone* is formed by Nees von Esenbeck, at the expense of the old and overgrown genus *Justicia*, but how far with judgment must be left for Dr. Anderson to decide, who is preparing a treatise on *Acanthaceæ* with all the care and attention that so difficult a subject demands. No less than thirty-one species are referred to it, all natives of tropical America, and all having elongated conspicuous purple flowers, with numerous foliaceous green bracts at their base. In the present instance the white line in the disk of the lower lip, with its many short branches, has a pretty effect on the purple corolla.

Beloperone violacea was introduced to gardens in Europe from New Granada, by Mr. Linden, to whom we are indebted for our plant. It is treated with us as an ordinary stove plant, and is easily cultivated. Linden indeed says it succeeds perfectly

"dans la serre tempérée, et même dans la serre froide; mais elle prospère encore mieux en pleine terre, où elle atteint la taille d'un arbrisseau de deux à trois pieds de haut, tandis qu'en serre elle acquiert à peine la moitié de cette hauteur. Plusieurs exemplaires, plantés en pleine terre de bruyère, à l'air libre, vers les premiers jours de mai, se sont développés avec une vigeur peu commune, et ont donné une floraison parfaite et d'un effet charmant, qui a duré jusque bien avant dans l'automne."

The author justly considers it an important acquisition for the ornamentation of our parterres, especially in summer and autumn, But I should fear the powerful summer Continental heats would be required, in which we are so deficient in England; and which is the cause of Cannas and other tropical ornamental plants not succeeding in the open air with us in summer, as they do with our neighbours.

Fig. 1. Calyx, with pistil and bracts. 2. Stamens. 3. Ovary and hypogynous cup:—*magnified.*









Tab. 5245.

PARITIUM elatum.

Lofty Paritium, or Cuba Bast.

Nat. Ord. Malvaceæ.—Monadelphia Polyandria.

Gen. Char. Involucellum decem-duodecim-fidum v. -dentatum. *Calyx* quinquefidus, *laciniis* æstivatione valvatis. *Corollæ petala* 5, hypogyna, expansa, unguibus imo tubo stamineo adnata, æstivatione convolutiva. *Tubus stamineus* columnæformis, infra apicem quinquedentatum, nudum; *filamenta* plurima, brevia exserens; *antheræ* reniformes. *Ovarium* sessile, simplex, quinqueloculare, *loculis* septo secundario parietali verticali incomplete bilocellatis. *Ovula* in loculis pluria, angulo centrali inserta, adscendentia. *Stylus* terminalis apice exserto quinquefidus; *stigmata* capitellata. *Capsula* quinquelocularis, *loculis* incomplete bilocellatis, loculicide per septa incompleta bilamellata quinquevalvis, *valvis* margine introflexis, medio septa completa gerentibus. *Semina* abortu pauca, *testa* crustacea, sinu umbilicata, nuda. *Embryo* intra albumen parcissimum mucilaginosum homotrope arcuatus; *cotyledonibus* foliaceis, plicato-convolutis, *radicula* infera.—Arbores *vel* frutices, *inter tropicos totius orbis crescentes;* foliis *alternis, petiolatis, integris, subtus ad basim nervi primarii glandulosis;* stipulis *lateralibus geminis, latis, deciduis;* pedunculis *unifloris, axillaribus vel terminalibus et tunc stipulato-bibracteatis;* corollis *lutescentibus vel purpurascentibus. Endl.*

Paritium *elatum:* arbor 50–60-pedalis, foliis amplis orbiculari-cordatis rarius subangulatis subito brevi-acuminatis integris vel brevi-dentatis submembranaceis subtus incanis vel minute pubescentibus concoloribus, floribus maximis pedunculatis terminalibus axillaribus, junioribus bibracteatis, bracteis cymbiformibus amplis, petalis obovato- vel oblongo-spathulatis unguiculatis, capsulis lateritiis ovato-globosis, seminibus villosis.

Paritium elatum. *Don, Gard. Dict. v.* 1. *p.* 485. *Richard, Fl. Cub. v.* 1. *p.* 146. *Griseb. Fl. Br. W. Ind. p.* 86. *Walp. Report. v.* 1. *p.* 311.

Hibiscus elatus. *Sw. Fl. Ind. Occ. p.* 1218. *M'Fad. Fl. Jam. v.* 1. *p.* 68. *De Cand. Prodr. v.* 1. *p.* 454.

Hibiscus abutiloides. *Willd. Enum. p.* 736. *De Cand. Prodr. v.* 1. *p.* 454.

Hibiscus arboreus, etc. *Browne, Jam. p.* 84.

Malva arboreo folio rotundato, flore liliaceo. *Sloane, Jam. v.* 1. *p.* 215. *t.* 134. *f.* 1, 2, 3.

This is a noble Malvaceous tree, with ample, cordato-rotundate foliage and large flowers, both in bud, and, when expanded, of a bright brick-red colour, of which no figure has been given save the very incomplete one of Sloane, *l. c.*, consisting of a single

leaf and flower, which flower, however, Swartz refers to *P. tiliaceum* (a species figured on the same plate), but I scarcely see why. It is true the two are not only nearly allied to each other, but are often confounded in herbaria. The *tiliaceum* is of universal distribution in all tropical parts of the world, and is everywhere spoken of as yielding a valuable and very strong fibre; while the *Paritium elatum*, though certainly not yielding to *P. tiliaceum* in the quality of its fibre, is, as far as I know, wholly confined to Jamaica and to Cuba, and does not appear to be very common. M'Fadyen tells us that it inhabits the lower hills and plains of the interior; but in Cuba only one locality is mentioned by Don Ramon de Sagra, "crescit in Insula Cuba, loco dicto 'Vuelto de Abajo;'" and he makes no mention of its economical properties; and, what is remarkable, the Flora of Cuba does not include at all the allied species *P. tiliaceum*, which in Jamaica is "common by the sea-shore."

Dr. M'Fadyen (whose notices of the properties of plants are deserving of imitation by all authors of local Floras) tells us that our *P. elatum* "affords a very valuable timber, much prized, especially by cabinet-makers, having, when worked up and polished, the appearance of dark-green variegated" (often called "green ebony," *W. T. March, Esq.*); "that the bark is the material employed by the Negroes in making the better description of ropes; and that young shoots and leaves yield abundantly a fine mucilage, which has been employed with advantage, infused in boiling water, as a substitute for the *vanglo*, or *zezegary*, in dysentery."

Till recently no one has hinted at any connection between the substance of Cuba Bast,—so well known in commerce for the beauty of its network-like fibre of the inner bark, resembling *lace-bark* of *Lagetta lintearia*, extensively used as a substitute for the bast of the Lime-tree during our war with Russia,—and this plant. At length my valued friend, Henry Christy, Esq., enabled us to settle the question by sending specimens and seeds from Cuba, which proved to be the tree now under consideration, and from which our figure is taken (see also a notice on this subject in the 'Kew Garden Miscellany,' vol. viii. p. 347). Thus a tree till lately supposed to be peculiar to Jamaica, is proved in Cuba to be the Bast of the latter island; and this is confirmed also by seeds since sent thence by Mr. Scharfenberg. Mr. N. Wilson, of the Jamaica Botanic Garden, has extracted exactly the same fibre from the *Paritium elatum* of Jamaica.

Whether the *P. elatum* (mountain Mahoe) and *P. tiliaceum* (sea-side Mahoe) are distinct or not, may perhaps still be considered *sub judice*. It is true that Patrick Browne, Sloane, M'Fadyen, De Candolle, and Grisebach maintain the two species,

but I think the marks of distinction given are very unsatisfactory, and assuredly very variable. If, indeed, the figure of *Paritium tiliaceum*, as given in the 'Botanical Register,' t. 232, be compared with our present figure of *P. elatum*, they may, on the first aspect, be considered distinct enough; while in reality the main difference is in the size of the leaves and flowers, and the colour of the latter, yellow (as it is always described in *tiliaceum*), bright brick-red in our *elatum*; while Grisebach describes its "petals in the early morning of a pale primrose-colour, then becoming orange-colour and deep-red as the day advances." No such change took place in the flowers of our living plant. In these, too, the petals are very broad-obovate and clawed: in our dried native specimen most of the petals are narrow and oblong or subspathulate, and as to colour, *when dry* they become of a deep, almost verdigris-green, sometimes quite coppery, and at other times partaking of the two colours. I have used the best marks I can find in my specific character, which may render any further description superfluous.

Fig. 1. Portion of a forked filament and anthers,—*magnified*. 2. Capsule and involucel (the large calyx having fallen away). 3. Seed:—*natural size*. 4. Seed,—*magnified*.

W.Fitch, del. et lith.

Vincent Brooks, Imp

Tab. 5246.

TILLANDSIA RECURVIFOLIA.

Recurved-leaved Tillandsia.

Nat. Ord. Bromeliaceæ.—Hexandria Monogynia.

Gen. Char. (*Vide Supra*, Tab. 5229.)

Tillandsia *recurvifolia;* foliis glaucescenti-lepidotis, e lata basi lanceolato-subulatis canaliculatis integerrimis, radicalibus insigniter recurvis, floralibus erecto-subpatentibus minus glaucis spicam æquantibus, scapo folioso brevissimo, spica late ovata subcapitata laxe bracteata, bracteis elliptico-oblongis acutissimis roseis, calycis albi laciniis lanceolatis mucronato-acutis basi in tubum unitis, corollæ albæ petalis spathulatis stamina superantibus filamentis supra medium crispato-flexuosis.

This is, as far as I can find, a new species of *Tillandsia*, evidently of the same group as, and nearly allied to, the pretty *T. pulchella*, figured in a late number of this Magazine, Tab. 5229, differing in the much broader, very glaucous, all very much recurved leaves, in the larger, almost sessile, and nearly ovate spikes of flowers, with much broader and pink-coloured, not red, bracts. We owe the possession of it to our friend, W. D. Christie, Esq., British Minister at Rio, who introduced it to Kew Gardens from Panama. I have already remarked, that easily as the *Tillandsiæ* are to import living, and tenacious as they are of life, no plants are more difficult to preserve in cultivation for any length of time.

Descr. Stemless. *Radical leaves* copious, densely imbricating at their broad base, and thence becoming lanceolato-subulate, three to four inches long, channelled, thickly clothed with minute scales, which give them a hoary and very glaucescent appearance; the interior and superior leaves, which immediately surround the inflorescence, are more erect, less glaucous, but broader, in proportion to the length, at their base. *Scape* very short, leafy, terminated by a broad ovate *spike* or *capitulum* of *flowers*, laxly imbricated with large broad-oblong, very acute,

rose-coloured *scales*, sometimes tipped with yellowish-green. The white flowers force back the rose-coloured bracts, and protrude a very little beyond them. *Calyx* of three erect imbricating almost mucronate sepals, nearly as long the corolla, united into a tube at the base. *Petals* pure white, with a spathulate *limb* and broad white *claws*. *Stamens* as long as the claws. *Filaments* linear-subulate, crisped and tortuose above the middle. *Anthers* small, linear. *Ovary* ovate, tapering into a thickened *style*, and terminated by three cuneate nearly erect *stigmas*.

Fig. 1. Entire flower. 2. Petal and two stamens. 3. Pistil :—*all magnified.*



W. Fitch, del. et lith.

Vincent Brooks, Imp.

Tab. 5247.

MALORTIEA simplex.

Simple-leaved Malortiea.

Nat. Ord. Palmaceæ.—Monœcia Hex-Dodecandria.

Gen. Char. —— ?

Malortiea *simplex*; lamina frondium plerumque simplici rare bijuge-pinnatisecta oblonga vel elongato-oblonga, apice brevissime bifida utrinque nervis primariis circiter 12, margine inferiore integro, superiore grosse dentato, dentibus excisis, segmentis compositis omnino adnatis, spadicibus simpliciter pauci-ramosis, staminibus 12. *H. Wendl.*

Malortiea simplex. *Herm. Wendland in Botanische Zeitung, No.* 1 *for* 1859, *p.* 5.

"Palma cæspitosa, pusilla, gracilis, metrum alta, valde affinis *Malortieæ gracili;* differt lamina frondium simplici rare bijugepinnatisecta, apice brevissime bifida. Patria Costa Rica orientalis. In hortis colitur." With the exception of this remark and the above specific character, this is all that we can find relating to this most graceful little Palm. It flowered in our stove in February of the present year, 1861; and we owe the possession of it to Mr. Hermann Wendland, of the Royal Hanoverian Garden of Herrnhausen. Respecting the genus, we can only discover a bare mention of the name as the 33rd Genus in "Hermann Wendland's Index Palmarum, Cyclanthearum, Pandearum, Cycadearum, quæ in hortis Europæis coluntur, synonymis gravioribus interpositis," with no reference to any character or description, and one species is named as belonging to it, namely, *M. gracilis*, of Herm. Wendland; and the "synonyma graviora" given under it, are "*Chamædorea fenestrata*, Hort. Parment.; *Chamærops fenestrata*, Hort. Amstelod.; and *Geonoma fenestrata*, Hort. Makoy," but none of these appear to be described or further noticed.

I feel it better, under such circumstances, to abstain from any

further remark : but if it should be our fortune to have the opportunity of figuring the *Malortiea gracilis*, we trust by that time Mr. Wendland will have published his views of the genus, and some further details relative to the two species.

Fig. 1. Reduced figure of *Malortiea simplex*, Herm. Wendl. 2. Leaf. 3. Spadix and spatha :—*natural size*. 4. Male and female flowers. 5. Male flower. 6. Female flower. 7. Inner view of the corolla. 8. Pistil. 9. Young fruit :—***all more or less magnified.***



W Fitch. del et lith

Vincent Brooks, Imp

Tab. 5248.

DRACÆNA BICOLOR.

Broad-leaved Two-coloured Dracæna.

Nat. Ord. Asparagineæ.—Hexandria Monogynia.

Gen. Char. Perigonium corollaceum, tubulosum, profunde sex-fidum ; *laciniis* subspathulato-linearibus, obtusis, uninerviis, æqualibus, patentissimis vel recurvatis. *Stamina* 6, fauci perigonii inserta, exserta, erecto-patula. *Filamenta* plana, angusto-linearia, apice subulato-attenuata. *Antheræ* biloculares, oblongæ vel lineari-oblongæ, apice bilobæ, basi bifidæ, dorso medio affixæ, introrsæ. *Ovarium* liberum, sessile, oblongum, triloculare ; *ovula* in loculis solitaria, sessilia, adscendentia, anatropa. *Columna stylina* filiformis, sulcato-triangularis, erecta, stamina superans. *Stigma* trilobum, lobis rotundatis. *Bacca* subglobosa vel tripulvinato-globosa, carnoso-succulenta, 1–3-sperma. *Semina* subglobosa. *Embryo* in basi albuminis cornei ad latus exterius locatus.—Caules *arborei vel fruticosi, simplices vel ramosi,* foliis *delapsis semiannulato-cicatrizati.* Folia *in apice caulis et ramorum conferta, lanceolata vel linearia, integerrima, sæpe inferne angustato-petiolata, ima basi semiamplexicaulia, striato-nervosa, pergamena vel subcoriacea, glabra.* Paniculæ *terminales, solitariæ, simplices vel ramosæ, bracteatæ, rarissime ad racemum solitarium redactæ.* Flores *pedicellati, solitarii, gemini, terni vel quini, in ramis paniculæ racemosim dispositi, albidi, virescenti- vel flavido-albi ;* pedicellis *basi bracteolatis, superne articulatis. Kth.*

Dracæna *bicolor ;* suffrutex humilis simplex, foliis ovatis subcoriaceis costatis vix striatis undulatis brevi-acuminatis apice mucronato-setaceis inferne in petiolum latum canaliculatum basi amplexicaule attenuatum, racemo capitato-spicato multifloro bracteato, pedicellis brevissimis, bracteolis lanceolatis intense purpureis longitudine corollæ tubi, limbi laciniis linearibus patentibus albis purpureo-marginatis, staminibus longe exsertis.

A native of Fernando Po, whence living plants were sent to us by Mr. Gustav Mann, in 1860: they flowered in February of the following year. Its nearest ally is doubtless the *Dracæna ovata* of Gawler, in Bot. Magazine, Tab. 1179; but that differs in the strongly marked parallel nerves of the leaves and the much shorter fascicle of flowers of a pale-rose colour, and other characters. It requires the heat of a stove, and flowered with us in February, 1861.

Descr. A foot high, erect. *Stem* as thick as the little finger, leafy, principally above. *Leaves* five to six inches long, including the rather short, broad, channelled *petiole*, ovate, waved, entire at the margin, rather suddenly acuminate, with a soft *mucro*

at the point. *Raceme* compound, dense, spicato-capitate, sessile, almost globose, very pretty from the mixture of white and deeply purple. Outer *bracts* large, broad, with amplexicaul bases. *Bracteoles* bright-purple, as long as the tubes of the corolla. *Corolla* white, the segments tipped and margined with purple. *Stamens* exserted. *Germen* ovate, three-celled, each *cell* with one erect seed. *Style* long, slender, filiform. *Stigma* capitate, three-lobed.

Fig. 1. Flower with its two bracts. 2. Stamen. 3. Pistil. 4. Ovary cut through vertically. 5. Ovary cut through transversely :—*magnified.*



Vincent Brooks, Imp

Tab. 5249.

DENDROBIUM LINGUÆFORME

Linguiform Dendrobium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4352.)

Dendrobium *linguæforme;* caulibus teretibus repentibus, foliis sessilibus obovatis alte trisulcatis, racemis erectis multifloris, sepalis petalisque linearibus acuminatissimis, labelli abbreviati lobo undulato tricarinato. *Lindl.*

Dendrobium linguæforme. *Sw. Act. Holm.* 1809, *n.* 247. *Sm. Exot. Bot. t.* 11. *Willd. Sp. Pl. v.* 4. *p.* 138. *Brown, Prodr. Fl. Nov. Holl. p.* 333. *Lindl. Gen. et Sp. Orchid. p.* 85.

A singular and we believe very rare Orchideous plant, first discovered by Sir J. Banks in the Pacific Islands, during Captain Cook's celebrated voyage; afterwards found by Mr. Brown in New Holland, at Port Jackson: and lately fine growing plants were sent to us from Moreton Bay by Mr. Hill. Cultivators of Orchideous plants will not despise this because it does not produce the gay and showy flowers which characterize so many of the family. The leaves are very curious, thick, and fleshy, and almost resemble pseudobulbs, while the racemes of flowers are elegant and graceful, and, save the labellum, of an ivory-white colour. It flowers with us in the winter months, and ought to succeed well in an ordinary greenhouse, seeing that the species is a native of Port Jackson, and found, according to Sir James Smith, "upon rocks on the sea-shore." That author, who figures it from a dry specimen, further remarks, "that the pretty delicate flowers, and the singularity of the stem and leaves, entitle it to a place in our conservatories, if a stone could be brought with the roots, and their mossy clothing undisturbed." We find it, however, succeed well on a piece of wood.

Descr. The green rounded *stem*, about as thick as a swan's

quill, creeps on the substance to which it attaches itself for a few inches, is branched, and bears rather numerous, alternate, very thick and fleshy, elliptical, sessile *leaves*, convex at the back, nearly plane on the upper surface, but marked with three rather deep longitudinal furrows. In a young state there are sheathing, short, membranaceous *stipules* at the base of the leaves, which are deciduous. From the base of the leaves again arise the slender, filiform *flower-stalks*, with one or two membranaceous *bracts* near the base, scarcely exceeding the leaf in length, terminated by a *raceme* of white *flowers* three to four inches long. *Ovary* small, tapering into a *pedicel*. *Sepals* and *petals* long, linear, acuminate; the two inferior sepals gibbous at the base. *Lip* small, quite concealed by the perianth, close-pressed to the column, three-lobed, middle lobe the largest, acute, reflexed, yellow, with red spots; the disk bearing three elevated plates or crests, which are crisped; side-lobes white, with a few red spots within.

Fig. 1. Side view of a flower. 2. The same, with the sepals and petals removed. 3, 4. Different views of the labellum:—*all magnified*.



W Fitch. del et lith

Vincent Brooks, Imp.

Tab. 5250.

AMOMUM Clusii.

Golden-flowered Grain of Paradise.

Nat. Ord. Zingiberaceæ.—Monandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 4603.)

Amomum *Clusii;* glabrum, caule elongato folioso, foliis linearі- v. oblongo-lanceolatis longe acuminatis, scapis floriferis radicalibus paucifloris, bracteis oblongo-cymbiformibus emarginato-cuspidatis, corollæ aureæ lobis lateralibus patentibus lanceolato-subulatis, dorsali amplo obovato-oblongo lateralibus longiore, labello late ovato-spathulato subacuto margine integro, filamento basi utrinque appendicula subulata aucto, connectivo apice obtuso, cornubus lateralibus subulatis porrectis.

Amomum Clusii. *Smith in Rees' Cyclop. (fide Hanbury).*

Amomum Danielli. *H.f. (quoad colorem floris), in Kew Journ. Bot.* 1852, *v.* 4. *p.* 129.

The determination of the various *Amoma* of Western Africa, several of which yield the seeds called "*Bastard Melligetta*" and "Grains of Paradise," have long been a source of great difficulty both to the botanist and pharmacologist; and our efforts to clear up the subject, by means of correspondence with our own and other collectors in that country, and by figuring specimens cultivated at Kew, have hitherto resulted in little beyond good illustrations and further confusion of synonymy. This has arisen very much from the necessity of having, besides dried specimens of leaves, flowers, and fruit (which appear at different seasons), flowers preserved in spirits or acid, and notes of their colour. Unfortunately some collectors have not hitherto been successful either in matching them properly, nor in making sure that the seeds sent home for germination, belonged to the plant to which they referred them. In the case of this species, the result has been the confounding of a golden-flowered and red-flowered species, by Dr. Hooker, in the 'Kew Journal of Botany;' he being misled by Dr. Daniell's confident assertion that the plant there figured had yellow flowers, and that the seeds,

which subsequently produced the plants figured in this Magazine (Tab. 4674) were gathered from the same individuals.

Mr. Hanbury, indeed, who has paid great attention to this subject, and who pointed out to Dr. Hooker the erroneous identification here alluded to, considers the yellow- and red-flowered plants as varieties. He says,—"I am obliged to conclude that *A. Danielli* varies in colour of flower from yellow to crimson; also considerably in the size of the fruit, in the latter being more or less furrowed; in the length of the scape, being simple or branched; and bearing one, two, or many fruits; and in the leaves being six inches to a foot or more long. The flowers do not differ much wherever grown, the apex of the anther is sometimes truncated; the seeds always brilliantly polished. I consider it to be the *A. Clusii*, Smith, and the "*Amomum à grandes feuilles du Sénégal*" of Guibourt.

That Mr. Hanbury is right in considering these plants as varieties (as Dr. Hooker had previously supposed, Kew Journ. Bot. vi. p. 294) we can well conceive, the only differences being, besides the colour, the smaller flowers and foliage of this, and its more acute labellum, with margins not undulated. Both are sent under the name of "Barsalo," or "Bassalo;" and both grow at several parts of the Bight of Benin, as Sierra Leone, Fernando Po, and Prince's Island.

The specimens here figured are from plants sent from Fernando Po by the lamented Mr. Barter, botanist to Dr. Baikie's Niger Expedition. It flowered in December.

Fig. 1. Flowering plant on a reduced scale. 2 and 3. Flowering portions, together with a single leaf,—*natural size.*



Mint Brooks Imp

Tab. 5251.

STREPTOCARPUS Saundersii.

Mr. Saunders's Streptocarpus.

Nat. Ord. Cyrtandraceæ.—Diandria Monogynia.

Gen. Char. Calyx 5-partitus, persistens, æqualis. *Corolla* tubuloso-infundibuliformis, *tubo* calycem duplo vel multoties superante, *fauce* ventricosa, *limbo* obliquo 5-lobo subæquali. *Stamina* 5, *anteriora* 2 fertilia, antheris glabris connatis, loculis divaricatis, *superiora* 3 sterilia, *tubo* omnino adnata, apice tuberculiformia. *Ovarium* teres, elongatum, rectum, 1-loculare, fere 4-loculare, *placentis* 2, didymis, lamellis conniventibus, *dissepimentum* spurium formantibus, utrinque revolutis, margine ovuliferis. *Stylus* linearis. *Stigma* bilabiatum, lobis reniformibus, inferiore vix majore. *Capsula* siliquæformis, teres, apice depressa, spiraliter torta, loculicide dehiscens, ovarii structuræ conformis. *Semina* plurima, minuta, oblonga.—Herbæ *austro-Africanæ, acaules, cæspitosæ vel caulescentes.* Folia *opposita* (*vel solitaria*). Scapi *plurimi,* 1(–2-*vel pluri*)-*flori, juniores circinatim involuti.* Corollæ *pallide cæruleo-purpurascentes, intus lineis purpureis notatæ. De Cand.*

Streptocarpus *Saundersii;* foliis solitariis amplissimis radicalibus humifusis cordatis obtusis grosse serratis velutino-pubescentibus subtus tomentosis elevato-venosis pulcherrime purpureo-roseis, scapis folio longioribus e basi folii costæ latæ aggregatis, cymis compositis multifloris, corollæ tubo lato rectiusculo, limbo obliquo bilabiato, labio superiore duplo minore bifido, inferiore 3-fido, lobis obovato-cuneatis.

For more than two months past this very fine new species of *Didymocarpus* has been in great beauty, and a succession of flowers are still appearing; it is unquestionably the finest of all the four species of the genus now known to our gardens. Its general affinity is with our *Streptocarpus polyanthus*, figured at Tab. 4850 of this work, but the differences are considerable: in *polyanthus* there is a compound, racemose panicle; the corolla has a short, narrow, singularly flexuose tube, much shorter than the limb; the leaves are much smaller, of a pale-green colour beneath. The great charm of our present plant is in the size, the colour of the under side of the foliage, rich purple-rose, less deep, indeed, as the leaves advance in age, and the delicate greyish-blue colour of the copious flowers, with two purple blotches in the faux. Cultivated in a good-sized pot, we can

hardly conceive a more interesting stove-plant.* It is possible it may bear a warm greenhouse in the summer months. It is a native of Natal. We owe the possession of it to our liberal friend W. Wilson Saunders, Esq., who received the seeds from Mr. Plant. We dedicate this species with great satisfaction to Mr. Saunders, who has done much for South African botany.

Our drawing was made in April, 1861. As is the case in *S. polyanthus*, the scapes originate from the base of the broad costa of the leaf, several rising in a line, and their bases are confluent.

Descr. *Leaf* solitary, radical, a foot long, and eight to nine inches broad, cordate, obtuse, velvety, strongly and coarsely serrated at the margin, pale yellowish-green above, beneath purple-rose-colour and very tomentose, *costa* or *midrib* very broad; primary veins strong and very prominent beneath; these are united by transverse secondary veins; ultimate veins or veinlets obscure. *Scapes* several, arising in a line from the base of the midrib, and confluent, erect, stout, terete, pubescent, green, bearing a compound *cyme* at the summit of numerous, rather large, pale-blue, drooping flowers. *Pedicels* an inch long. *Calyx* of five, deep, linear-lanceolate, rather small, somewhat spreading segments. *Corolla* an inch and a half long, infundibuliform: tube broad, nearly straight, longer than the very oblique limb, which has two, spreading lips; upper one two-, lower one three-lobed; lobes oval or obovate; *faux* with two deep purple spots, separated by a yellow line. *Stamens* two, very small, coadunate by their anthers; and three very small abortive ones, of which one is reduced to a small *gland*. *Ovary* cylindrical, downy, as well as the style, nearly equal to it in length, becoming twisted before the fruit is mature.

Fig. 1. Corolla laid open. 2. Pistil:—*magnified.*

* Since our drawing was made, at the present moment, the three monophyllous plants cultivated in one pot have yielded twenty-one scapes, and more than a hundred and twenty flowers are in perfection.



W Fitch, del et lith

Vincent Brooks, Imp

Tab. 5252.

DIMORPHOTHECA graminifolia.

Grassy-leaved Dimorphotheca.

Nat. Ord. Compositæ.—Syngenesia Polygamia Necessaria.

Gen. Char. Capitula radiata, *fl. radii* fœmineis ligulatis, *disci* exterioribus hermaphroditis tubulosis quinque-dentatis ad lobos extus appendiculatis, intimis masculis abortivis. *Involucrum* uniseriale, *squamis* linearibus acuminatis. *Receptaculum* planum, demum convexum, nudum aut *paleis* paucis deciduis instructum. *Stylus flor. hermaphr.* desinens in ramulos breves acutos apice rotundatos margine glanduliferos extus piliferos, *flor. fœm.* in ramulos longos glabros fissus. *Achænia* recta, calva, *radii* exalata obconica subtriquetra tuberculata, *disci* plano-compressa bialata, *alis* semine latioribus margine incrassatis.—Herbæ *aut* suffrutices *Capenses*. Folia *plus minus scabrida, alterna*. Capitula *terminalia, solitaria;* disco *luteo aut fusco;* ligulis *supra albis, subtus purpurascentibus, nunc luteis. De Cand.*

Dimorphotheca (§ Lestibodea) *graminifolia;* caulibus simplicissimis monocephalis subaphyllis, foliis ad collum plerisque confertis linearibus subintegerrimis. *De Cand.*

Dimorphotheca graminifolia. *De Cand. Prodr.*

Calendula graminifolia. *Linn. Sp. Pl. v.* 2. *p.* 1305. *Mill. Gard. Dict. n.* 7; *Icon. t.* 76. *f.* 1. *Berg, Cap. p.* 311. *Ait. Hort. Kew. v.* 3. *p.* 271. *ed.* 2. *v.* 5. *p.* 167. *Willd. Sp. Pl. v.* 3. *p.* 2345. *Loddiges, Bot. Cab. Bot. Reg. t.* 289.

Dimorphotheca Statices folio. *Vaill. Act. Paris,* 1720, *p.* 280.

Arctotis tenuifolia. *Poir. Suppl. v.* 1. *p.* 439.

Bellis Africana, florum pediculos foliosis, foliis angustis et integris. *Commel. Hort. v.* 2. *p.* 67. *t.* 34.

Were this not so straggling a plant, it would surely be a greater favourite in our greenhouses than it is; but the flowers want compactness, handsome as they are individually; so that, though known in European gardens as early as 1698, when it was introduced into Holland from the Cape, it has never been generally cultivated, and has often been lost to the country. We raised it recently from seeds sent from South Africa; it also strikes readily from cuttings. It might make a good summer bedding-out plant, if the stems were well pegged down. Our drawing was made in April of 1861.

Descr. *Stems* between herbaceous and woody, weak, terete,

green, varying in length, simple or slightly branched. *Leaves* linear or linear subspathulate, from three to four or five inches long, entire or slightly toothed. *Flowers* on long terminal *peduncles*, two and a half inches across. The *ray* white above, orange-brown beneath. The *disk* deep purple, dotted with the yellow of the anthers.

Fig. 1. Floret of the ray, with its wingless ovary. 2. Front of the disk, with stamens and pistil:—*magnified*.



Vincent Brooks, Imp.

Tab. 5253.

STENOGASTER concinna.

Neat Stenogaster.

Nat. Ord. Cyrtandraceæ.—Didynamia Angiospermia.

Gen. Char. Calyx quinquefidus, basi ovario adnatus, obliquus. *Corolla* infundibuliformi-campanulata v. hypocraterimorpha, limbo obliquo patente. *Stamina* 4; *antheris* per paria connatis. *Glandulæ* 5, distinctæ. *Ovarium* vix semi-inferum, ovoideum; stigmate bilobo.

Stenogaster *concinna;* pusilla, puberula, caulibus brevissimis cæspitosis, foliis petiolatis late ovato-rotundatis grosse crenato-serratis, pedunculis axillaribus elongatis unifloris scapæformibus, calyce parvo, corollæ pallide lilacinæ, tubo superne luride purpureo, fauce pallida intus maculata.

This pretty little plant flowered in Messrs. Veitch and Son's Nursery, at Chelsea, in the month of April last, but it is not known from what country it came, nor by whom it was imported. The habit is that of a small Indian *Didymocarpus*, but the position of the ovary, the glands, and stamens, remove it from that tribe of the Order, and place it amongst the old *Gloxinias*. It appears to accord with the characters of Hansteen's genus *Stenogaster*, and has the same subscapigerous habit and flower as *S. hirsuta* (Bot. Mag. Tab. 1004). The deep-green close foliage, bright stems, petioles, and veins, and abundance of pretty flowers, render it an attractive plant, when well cultivated.

Descr. *Stems* deeply tufted, half an inch to an inch high, deep vinous red, as are the petioles and veins of the leaf. *Leaves* opposite, broadly ovate, subrotund, strongly crenate, about half an inch to three-quarters of an inch broad. Flowering *peduncles* axillary, very numerous, solitary, one-flowered, naked, resembling scapes. *Flowers* nearly an inch long. *Calyx* green, small, oblique, with five, narrow-oblong, blunt *lobes*. *Corolla* between funnel-shaped and campanulate, with five spreading blunt *lobes*. pale-lilac, deeper along the upper surface of the tube and on the

throat above, yellower below, the *throat* spotted with purple. *Stamens* four, included; the *anthers* connate in pairs; *filaments* inserted near the base of the tube.—*J. D. H.*

Fig. 1. Leaf. 2. Calyx and pistil. 3. Corolla, laid open, showing the stamens. 4. Pistil and glands at the base of the ovary :—*magnified*.



W. Fitch del. et lith.

Vincent Brooks, Imp.

Tab. 5254.

BEGONIA PHYLLOMANIACA.

Proliferous-stemmed Begonia.

Nat. Ord. Begoniaceæ.—Monœcia Polyandria.

Gen. Char. (*Vide supra*, Tab. 4172.)

Begonia *phyllomaniaca;* caule elongato subtortuoso erecto carnoso viridi tereti crasso patentim parce et patentim piloso molliter subulato-setoso copiosissime prolifero, petiolis longitudine foliorum vel longioribus, foliis semipedalibus, cordato-ovatis inæquilateris subpeltatis longe acuminatis basi præcipue varie lobatis, lobis acuminatis margine apiceque molliter spinuloso-serratis ciliatisque viridibus, bracteis ovatis acuminatis membranaceis patentibus fuscis, paniculis corymbosis axillaribus, floribus tetrapetalis, exterioribus suborbicularibus; *masculorum* 2 interioribus nanis, *fœmineorum* 2 interioribus exter. æquilongis angustioribus, capsulæ immaturæ alis omnibus inæqualibus, 2 brevibus, unica elongata obtusa.

Begonia phyllomaniaca. *Mart. in Hook. Kew Gard. Miscell. v.* 4. *p.* 206.

Knesebeckia phyllomaniaca. *Klotzsch in Walpers Annal. v.* 4. *p.* 890.

This *Begonia* has been received from the Berlin Botanic Garden under the name of *B. prolifera*,* and, as is too much the case with horticulturists, without any authority for the name attached to it, or any notice of the country whence it has been derived; and in the present state of the very difficult genus *Begonia*, with the several changes that it has undergone, first by the late Dr. Klotzsch, and more recently by M. Alphonse De Candolle, it would seem a hopeless task to endeavour to ascertain if it is anywhere described. Fortunately it possesses a character which led to the determination of the species in this case, namely, in the whole surface of the stem, and to a certain extent the leaf-stalks also, being all quite "*hérissé*," or squarrose, and proliferous, so to say, with minute leaves, single or in clusters, which are capable of forming new plants, and which appear in some cases to burst through the bark of the stem; at other times soft spine-like, green papillæ develope themselves into

* There is a *Begonia prolifera* of Alphonse De Candolle, in the Ann. des Sc. Nat. 4th ser. v. 11. p. 135, but that is a stemless and very different plant.

these leaf-buds. The only mention I can find of it is in Hook. Kew Garden Misc. vol. iv. p. 206, in a communication from Dr. Wallich, to the following effect:—"At one of the last meetings of the Royal Bavarian Academy at Munich, a very remarkable species of *Begonia* was exhibited by Professor Von Martius, having this extraordinary peculiarity, that it produces from the stem, branches and petioles, innumerable leaflets, which on being detached and placed on moist ground, produce roots and plants. In order to mark this singular property, the Professor calls the species *B. phyllomaniaca*—being possessed by *phyllomania*. On the margin and apex of these leaflets (which sometimes cover the plant to the extent of a thousand, and which at first are hair-shaped), cells are produced, single or united into groups (three to six), and filled with a yellow juice. One common cell often envelopes one of these little groups, and afterwards peels off," ready to constitute a new plant.* This is phyllomania in earnest. The account is accompanied by a brief but very accurate description, which leaves no doubt of the identity of our plant with it. The native country of the plant is not given.

Fig. 1. Capsule. 2. Transverse section of capsule,—*slightly magnified*. 3. Portion of the proliferous stem,—***natural size.***

* Since the above was written, I find in the latest Fasciculus (xxvii.) of Von Martius's 'Flora Brasiliensis,' which has just reached my hands, a very full account of this plant, at p. 386, where it is referred to the group of *Gereondia* of *Begonia* (genus *Gereondia* of Klotzsch), and admirable representations at t. 99 and 100 of the plant itself, and the very remarkable physiological structure of the minute leaves and leaf-buds, in a numerous series of figures. The species is said to inhabit Guatemala, and, probably, Brazil.



Tab. 5255.

CALADIUM BICOLOR, var. *Chantini*.

Two-coloured Caladium; Chantin's var.

Nat. Ord. Aroideæ.—Monœcia Monandria.

Gen. Char. (*Vide supra*, Tab. 5199.)

Caladium *bicolor;* foliis peltatis ovato-sagittatis, lobis profundis paululum divaricatis bicoloribus, spatha erecta basi ovoidea v. subglobosa medio coarctata apice ovato-acuminata.

Var. *Chantini;* foliis supra luride viridibus albo maculatis venis latissime rubris.

Caladium bicolor. *Vent. Pl. Nouv. t.* 30. (Tab. Nostr. 5199, *cum syn.*)

Caladium Chantini. *Ch. Lem. Ill. Hort. Aug.* 1858, *p.* 58. *Flore des Serres, t.* 1352.

Amongst the many splendid kinds of varigated-leaved plants, for most of which we are indebted to the skill of the horticulturist, none surpasses the present in effectiveness; for owing to the breadth of the white and red markings, and especially to the vividiness of the latter, it stands out in brilliant relief against the broad green foliage of the stove. When describing a more delicate but less conspicuous variety, var. *Neumannii*, at Tab. 5199, we stated that there could be no doubt of its being a variety of the old and well-known *C. bicolor*, and we need hardly add that this is another state of the same protean species. Both are stated to have been imported from Pará. It has been observed that these and other kindred Aroids display in their native forests considerable variations in the colour of the leaf; but these are never so marked or vivid as they become by careful cultivation, and propagation afterwards from the brightest-coloured individuals that appear. Even our own *Arum maculatum* displays some tendency to vary in the colour of the leaf, and a specimen was the other day sent to the Royal Gardens, with two clear cream-coloured bands on the leaf; it was a solitary sickly plant however, growing in a ditch, and is probably not strong enough to establish a garden variety from.

Fig. 1. Spadix. 2, 3. Stamen. 4. Ovary. 5. Vertical and transverse sections of ovary:—*all magnified.*

W Fitch, del et lith

Ann. Bot. Bridges, Lith

Tab. 5256.

BEGONIA GLANDULOSA.

Glandular-leaved Begonia.

Nat. Ord. Begoniaceæ.—Monœcia Polyandria.

Gen. Char. (*Vide supra*, Tab. 4172.)

Begonia *glandulosa;* rhizomate crasso suberecto flexuoso, stipulis magnis ovatis acuminatis, petiolis elongatis teretibus pilosis, foliis late oblique orbiculari-cordatis acuminatis sinuato-dentatis carnosis utrinque nitidis superne venis nigro-pictis glaberrimis, subtus minutissime pustulatis, scapo elongato tereti glabrato folia æquante v. superante, cyma repetite dichotoma ramulis laxe trichotome ramosis multifloris, ramulis pedicellisque gracilibus, floribus parvis, masculis sepalis 2 ovato-orbiculatis, staminibus 6–8, fœmineis sepalis 4 oblongis, capsulæ ala magna triangulari.

Begonia glandulosa. *A. De Candolle in Herb. Hook.*

Begonia multinervia. *Liebm., Mexic. Begon. p.* 18?

Begonia nigro-venia. *Hort. Linden.*

This plant was received from Mr. Linden seven years ago, under the name of *B. nigro-venia*. It is certainly identical with a plant called in our herbarium *B. glandulosa*, A. DC., by De Candolle himself, when preparing the Begonias for publication in the forthcoming volume of the 'Prodromus,' and which was gathered by Seemann at Veraguas. (See Ann. Sc. Nat. ser. iv. vol. ii. p. 148.) This plant, however, agrees with Liebmann's description of *B. multinervia*, from Costa Rica, so closely that it is not improbable that they may be the same.

Descr. *Rhizome* stout, prostrate, ascending, covered with stipular scales. *Petioles* a span long and upwards, terete, bright-red, rather hairy. *Leaf* four to six inches broad, of a fleshy texture, obliquely broadly ovate or cordate, or almost rotundate, with an open or closed deep sinus, and obscurely sinuate-toothed margins, glabrous, or very slightly hairy, shining on both sides but most so below, deep-green above, the *veins* painted with broad black or ferruginous bands, paler beneath, painted red, and cuticle covered with minute pustules. *Scape*

slender, terete, very tall, bearing a profusely-branched *cyme*, with deep-red branches and pedicels. *Flowers* very numerous and rather small, pale-green or whitish: *males* smaller, with two, broadly ovate, blunt sepals, and six to eight stamens; *females* with four, oblong sepals, and capitate stigmas. Large wing of *fruit* triangular, blunt.

Fig. 1. Male; and 2. Female flowers:—*both magnified.*



3



1



2.



5.

6

4.



Tab. 5257.

RESTREPIA Lansbergii.

Lansberg's Restrepia.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. *Sepala* patentia, lateralia labello supposita majora, connata; supremum erectum. *Petala* filiformia, basi triangulari breviter connata. *Labellum* liberum, patens, basi biauriculatum v. bicorne. *Columna* ovario subincumbens, brevis, semiteres, apice alata. *Anthera* 1-locularis. *Pollinia* 2 (v. 4), ceracea, oblonga.—Herbæ *Americanæ tropicæ.* Caules *cæspitosi monophylli.* Flores *axillares majusculi, solitarii v. fasciculati.*

Restrepia *Lansbergii;* gracilis, acaulis, caule bipollicari, folio anguste oblongo utrinque obtusiusculo, spatha membranacea carinato-falcata, floribus solitariis v. fasciculatis, pedunculis folio brevioribus, sepalo petalisque superiore lanceo-setaceis apice incrassatis, inferiore oblongo apice bidentato, lateribus utrinque unisetosis, labello ligulato.

Restrepia Lansbergii. *Rchb. fil. in Bonplandia, v. 2. p. 23; Xenia, p. 171. t. 60.*

A remarkable and beautiful little plant, first discovered in the Caraccas Mountains by Wagener. Our plants were received from Mr. Salwyn, who collected them in Guatemala. In this genus the lateral sepals and petals bear clavate tips, resembling, in some cases, the antennæ of insects.

Descr. A small tufted *epiphyte*, three to four inches high. *Stems* simple, covered with membranous sheaths, each bearing one leaf. *Leaf* linear-oblong, coriaceous, deep-green, blunt at both ends. *Peduncles* solitary or several, much shorter than the leaf. *Flowers* nodding, pale yellow, spotted with purple. *Posterior sepal* and *petals* all subulate, with clavate tips. *Lower sepal* oblong, bifid at the apex, bearing a subulate tooth on each side above the base. *Column* slender, thickened upwards.

Fig. 1. Flower and leaf. 2. Posterior view of flower. 3. Anterior view of ditto. 4. Lip. 5. Column. 6. Pollen:—*all magnified.*

July 1st, 1861.

Tab. 5258.

LINDENIA rivalis.

Riverside Lindenia.

Nat. Ord. Rubiaceæ.—Pentandria Monogynia.

Gen. Char. Lindenia, *Benth.*—*Calycis tubus* turbinatus, 5-costatus; *limbus* quinquepartitus, laciniis angustis acutis. *Corolla* hypocrateriformis, tubo longissimo tenui æquali; limbo 5-partito, laciniis oblongis patentibus, æstivatione imbricatis. *Antheræ* 5, lineares, sessiles ad corollæ sinus. *Stylus* filiformis, e basi glaber, apice incrassatus, brevissime bifidus, lobis intus stigmatiferis. *Capsula* laciniis calycinis coronata, bilocularis, placentis centralibus. *Semina* numerosissima, angulata.—Frutices *Mexicani.* Flora *opposita, breviter petiolata, oblonga, ad apices ramorum conferta.* Stipulæ *utrinque solitariæ, fusco-membranaceæ, acuminatæ, in vaginam brevem connatæ, deciduæ.* Corymbus *terminalis, condensatus, pauciflorus.* Bracteæ *lineares.* Flores *subsessiles, albi.*—*Benth.*

Lindenia *rivalis;* corollæ limbi laciniis obtusiusculis tubo 4–5-ies brevioribus. *Benth.*

Lindenia rivalis. *Benth. Pl. Hartweg. p.* 84. *Hook. Ic. Pl. v.* 6. *t.* 476. *Linden, Hort. Lind.*

A very handsome Rubiaceous genus, established by Mr. Bentham in his 'Plantæ Hartwegianæ,' on specimens first, we believe, collected by Mr. Linden in Southern Mexico, on the banks of the Teapa (Herb. du Sud, n. 331), and by Mr. Hartweg on the banks of streams; La Vera Paz, Guatemala, Hartweg, n. 581. It was first figured by us in the 'Icones Plantarum,' above quoted; since by Mr. Linden in 'Hortus Lindenianus,' and in the 'Flore des Serres,' as above quoted. The author compares the genus to that of the Brazilian *Augustea*, but differing in the form of the corolla, of which the tube is long, slender, and straight, as in *Tocoyena*, without the inflated throat of *Augustea;* the style is also perfectly smooth.

It is a handsome evergreen shrub, with leaves clustered, as it were, at the apices of the branches, and an imperfect corymb of remarkably long tubular flowers, which are, in our stove at Kew, in perfection in May, and have the merit of continuing some

time in flower. A second species, *L. acutiflora*, Hook., is figured in the 'Icones Plantarum,' 6475.

Descr. *Shrub*, much branched, two to three feet high. *Leaves* opposite, shortly petioled, lanceolate, acuminate, two to three inches long, young pubescent, old glabrous. *Stipules* subulate, acuminate, connate into a short tube, deciduous. *Corymb* terminal, few-flowered. *Bracts* linear-oblong, exceeding the *ovary*. *Flowers* subsessile. *Calyx-tube* three to four lines long: *segments* linear. *Corolla* white, its tube five to five and a half lines long, slender, pubescent: *limb* an inch broad.

Fig. 1. Calyx and pistil. 2. Calyx, with inferior ovary, with a segment of the calyx removed. 3. Transverse section of the ovary:—*all more or less magnified.*

Tab. 5259.

LEPANTHES Calodictyon.

Net-leaved Lepanthes.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. Sepala patula v. reflexa, sæpius basi connata, rarius libera. *Petala* 2, nana, forma varia, appendiculata v. inappendiculata. *Labellum* parvum, liberum v. columnæ adnatum. *Columna* teretiuscula, nana v. elongata. *Pollinia* 2.—Herbæ *epiphytæ, sæpissime parvulæ.* Caulis *filiformis, rarius robustus, simplex, vaginatus.* Folium *unicum.* Spicæ *v.* racemi *axillares.* Flores *minutissimi, flavi v. rubri.*

Lepanthes *Calodictyon;* vaginis caulis campanulatis ore ciliato, folio late ovato-cordato apiculato sinuato-crenato pallide viridibus venis late brunneis areolato-reticulatis, sepalis liberis ovatis acuminatis, petalis supra sepala reflexis oblique reniformi-cordatis ciliatis utrinque basi appendice filiformi instructis.

Stelis Calodictyon *v.* Calodictyon Andium. *Spruce, MSS.*

A very singular and beautiful little plant, remarkable for the disposition of the colouring matter in the leaf, which is very pale watery-green in the areoles of the veins, the latter being covered with a broad brown band. In the form and arrangement of the sepals and petals, it differs totally from any known species of *Lepanthes* (in most of which the sepals are connate, and the lip reduced to a mere scale), but is so closely allied together in habit and essential characters, that it seems unadvisable to make a new genus of it. The plant was discovered by Mr. Spruce, and the specimens figured were imported by Mr. Crosse, and flowered by Mr. Osborne of Clapham Nursery.

Descr. A small slender tufted plant. *Stems* two inches high, clothed with sheathing trumpet-shaped scales, each with an expanded ovate-acuminate ciliate mouth. *Leaf* broadly ovate, rather membranaceous, apiculate, undulate, with subsinuate margins; pale-green, reticulated with brown. *Peduncles* solitary or fascicled, shorter than the leaf, axillary, bearing a short raceme of minute flowers. *Sepals* free, green, ovate, acuminate, reflexed. *Petals* reniform-cordate, acute, ciliate, reflected on the petals,

furnished at the base on either side with a long, filiform, erect appendage, deep orange-red. *Lip* erect, spathulate, applied to the face of the column, entire. *Pollen masses* two, tapering to a small gland.

Fig. 1. Stem, leaf, and inflorescence. 2 and 3. Lateral and front view of flower. 4. Anther-case. 5. Pollen :—*all magnified.*



Tab. 5260.

PENTSTEMON SPECTABILIS.

Beautiful Pentstemon.

Nat. Ord. Scrophularineæ.—Didynamia Angiospermia.

Gen. Char. (*Vide supra*, Tab. 4318.)

Pentstemon *spectabilis;* glaberrimus, caule elato herbaceo, foliis oblongis ovato-lanceolatis rigide serrato-dentatis inferioribus sessilibus superioribus connato-amplexicaulibus floralibus orbiculatis v. late ovatis acuminatis, panicula ampla pyramidata, sepalis late ovatis acuminatis, corollæ tubo basi angusto subito dilatato campanulato bilabiato, lobis rotundatis patentibus, staminibus glabris.

Pentstemon spectabilis. *Thurber in A. Gray, Bot. of Thurber's Expedition, ined. Torrey's Report of Whipple's Exped. Bot. p.* 63.

A lovely Californian species, described by Dr. Torrey as one of the showiest known; the crowded panicle of purple flowers often attaining two feet in length. It was discovered by Mr. William A. Wallace, who sent it to Dr. Torrey, and has also been gathered on San Francisco Mountain, in New Mexico, during Whipple's Expedition for laying down a railroad across the Rocky Mountains to the Pacific. The specimens figured were from plants introduced into this country by Messrs. Low, of Clapton, and flowered in May of the present year.

Descr. Perennial, everywhere glabrous, and inclining to be glaucous, erect, two to three feet high. Lower *leaves* petioled, ovate, acute or acuminate, coarsely doubly toothed: upper sessile, and connate by their broad bases; uppermost or floral leaves much smaller, very broadly ovate, or almost orbicular. *Flowers* in a tall, lax, branched, pyramidal panicle, about an inch long, with a campanulate tube and bilabiate spreading limb; *colour* very delicate shades of blue-violet and pale red-purple. *Calyx-lobes* broadly ovate, acute. *Stamens* all perfectly glabrous.

Fig. 1. Base of corolla and stamens. 2. Ovary:—*both magnified.*



Tab. 5261.

DENDROBIUM Hillii.

Mr. Hill's Dendrobium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 4352.)

Dendrobium *Hillii;* caulibus valde elongatis articulatis, articulis 3–4-uncialibus teretibus plurisulcatis, foliis 4–6 ellipticis vel oblongis crasso-coriaceis atro-viridibus enerviis, racemo pendulo pedali et ultra 4 uncias lato, floribus numerosissimis sepalis e lata basi sensim subanguste attenuatis, petalis linearibus, labello oblongo transversim fusco-lineato, lobo medio orbiculari, disco subbicarinato.

Many years ago, Mr. J. Smith assures me, living samples of this fine *Dendrobium* were sent from Moreton Bay to the Royal Gardens of Kew, with an opinion expressed that it might possibly be the *D. undulatum* of Brown's Prodr. p. 332. I do not find that they ever flowered: but one thing is certain, that I possess in my herbarium a specimen of the true *D. undulatum* of Mr. Brown, with the correct name in Mr. Cunningham's handwriting; and another specimen from Albany Island, from A. C. Gregory (see F. Mueller's Fragm. Phytogr. Austr. fasc. 4. p. 87); and also from Port Curtis, gathered by Mr. M'Gillivray during the voyage of the 'Rattlesnake' (1847); it is a very different species from that now under consideration. The *D. undulatum* has, as its name would imply, singularly undulated petals and sepals of very lurid colours, and sharp segments to the lobes of the lip, and it is also a native of Java. Dr. Lindley has shown that his *D. discolor*, from the latter country, figured in Bot. Reg. for 1841, tab. 52, is identical with Mr. Brown's *D. undulatum*.

Our present plant must then be considered a new species; and as our living specimens were derived from the very zealous botanist and superintendent of the Botanic Garden at Moreton Bay, Mr. Walter Hill, we gladly dedicate it to him. Even with-

out the flowers, this plant, standing by the side of *D. speciosum* in our stove, may be at once recognized as distinct, by the greater length of the pseudobulbs or stems and of the leaves. Our flowering racemes are still more distinct, in the dense mass of flowers of *D. Hillii* on the very large and very drooping racemes, and by the longer and more tapering sepals, together with the long, narrow, linear petals.

Fig. 1. Flower, front view. 2. Column and lip. 3. Front view of the lip. 4 and 5. Pollen-masses :—*all more or less magnified.*

Vincent Brooks, Imp

Tab. 5262.

GOMPHIA olivæformis.

Olive-fruited Gomphia.

Nat. Ord. Ochnaceæ.—Pentandria Monogynia.

Gen. Char. Calyx pentaphyllus, sæpissime coloratus; *foliolis* imbricatis, deciduis. *Corollæ petala* 5, hypogyna, sæpissime obovata, unguiculata, patentia. *Stamina* 10, hypogyna, erecta, conniventia; *filamenta* brevissima; *antheræ* introrsæ, biloculares, basi affixæ, subulato-tetragonæ, transversim annulato-rugosæ, apice poris duobus dehiscentes. *Ovarium* columna centrali stylifera depressissima, quinque-sexpartitum, lobis gynophori obconici apice oblique insidentibus obovatis obtusissimis, *ovulo* unico e basi adscendente anatropo fœtis; *stylo* inter lobos centrali simplicissimo; *stigmate* minimo. *Bacca* 5, v. abortu pauciores, gynophoro demum ampliato insidentes, uniloculares, monospermæ. *Semen* erectum; *testa* membranacea. *Embryonis* exalbuminosi orthotropi *cotyledones* carnosæ, plano-convexæ; *radicula* brevissima, infera.—Arbores, frutices, v. suffrutices *in Asia et Africa, multo frequentius in America tropica crescentes;* foliis *alternis, persistentibus, simplicibus, breve petiolatis, coriaceis, nitidis, ovalibus v. oblongis, subintegerrimis v. argute serratis;* stipulis *axillaribus, geminis, nunc distinctis, caducis, nunc in unicam, intrafoliaceam, persistentem coalitis;* paniculis *aut* racemis *terminalibus v. interdum simul axillaribus, bracteatis;* floribus *luteis;* pedicellis *angulatis, basi articulatis. Endl.*

Gomphia *olivæformis;* foliis latis lanceolato-ellipticis acuminatis obsolete serrulatis basi integerrimis, racemis (compositis subthyrsoideis) terminalibus, antheris leviusculis, gynobasi in fructu turbinata. *St. Hil.*

Gomphia olivæformis. *St. Hil. Fl. Bras. Merid. v.* 1. *p.* 67. *Walp. Repert. Bot. v.* 1. *p.* 526.

Gomphia decorans. *Lemaire, Jard. Fleur. v.* 4. *t.* 415.

Gomphia is a very handsome tropical genus of shrubby or arborescent plants, with copious bright-yellow flowers, abundant in South America, very rare in collections in England, but of which an African representative, viz. *Ochna atro-purpurea*, has flowered at Kew, and is represented at our Tab. 4519. We owe the possession of the present species of *Gomphia* to Messrs. Henderson, of the Wellington Road Nursery. It is a native of Brazil, and produced its panicle of bright-yellow flowers in our stove in May of the present year, 1861. Mr. Henderson appears to have received it from the Continent, under the name of

Gomphia decorans, Lemaire; but it agrees in all particulars with *G. olivæformis*, which name we do not hesitate to adopt.

Descr. Shrubby. Our flowering specimen has not attained a height of more than three feet, but this is perhaps forced early into blossom by cultivation. In its native country it reaches to fifteen feet. *Branches* terete, green. *Leaves* alternate, glossy, three to five or six inches long, petiolate, elliptical-lanceolate, short-acuminate, penniveined, finely serrulate at the margin, bright-green, subcoriaceous; *petiole* short, with a pair of subulate, caducous, brown *stipules*. *Panicle* terminal, subthyrsoid, a span long, its *branches* subcorymbose. *Flowers* copious, bright yellow. *Calyx* of five, oblong-lanceolate, obtuse, yellow *sepals*, scarcely tinged with green, even in the bud. *Petals* broad, obovato-spathulate, subunguiculate, spreading. *Stamens* five, sessile, broad subulate, orange-yellow, erect, connivent into a cone, opening at the apex by two pores. The five *ovaries* are elevated upon a fleshy column, and surround the base of a thickened, subulate, curved *style*; *stigma* a blunt point.

Fig. 1. Leaf from a lower part of the plant,—*natural size*. 2. Flower from which the petals are removed. 3. Single stamen:—*magnified*. 4. Pistil and gynobase,—*magnified*.

Tab. 5263.

CALADIUM bicolor; *var.* Verschaffeltii.

Two-coloured Caladium; *Verschaffelt's* var.

Nat. Ord. Aroideæ.—Monœcia Monandria.

Gen. Char. (*Vide supra*, Tab. 5199.)

Caladium *bicolor*; foliis peltatis ovato-sagitatis, lobis profundis paululum divaricatis bicoloribus, spatha erecta basi subglobosa medio coarctata apice ovato-acuminata.

Var. *Verschaffeltii*; foliis læte viridibus intense sanguineo-maculatis, maculis viridi-ocellatis.

Caladium Verschaffeltii. *Ch. Lem. in Fl. des Serres, ser.* 2. *v.* 3. *p.* 103.

This is another of the many striking new varieties of *Caladium bicolor*, which has been recommended for the further ornamenting of our stoves, and which is certainly not among the least beautiful of the kind. Upon the deep green ground of the blade of the leaf, are numerous irregular blotches of a rich blood- or almost carmine colour, the largest of which are ocellated, that is, have little eye-like spots of green, as in the var. *Neumannii*, figured at our Tab. 5199, but there the deep-rose-coloured blotches are ocellated with white, and are moreover surrounded by a white limbus. The several variously coloured *Caladiums*, now known to us, have a very striking effect, whether grouped in masses, or mixed off with other plants, especially Ferns, the gracefulness of whose forms contrast well with the large aroid foliage of those now under consideration. The present variety was received from M. Chantin, of Paris.

Fig. Flowering spadix, removed from the spatha,—*natural size*.



Tab. 5264.

CERINTHE RETORTA.

Curve-flowered Cerinthe.

Nat. Ord. Borragineæ.—Pentandria Monogynia.

Gen. Char. Calyx profunde 5-partitus, lobis plus minus inæqualibus, foliaceis. *Corolla* tubulosa, fauce nuda. *Antheræ* hastatæ, lobis basi divergentibus, attenuatis, subconnatis. *Stigma* obtusum. *Nuculæ* 2, ovatæ, subosseæ, biloculares, sæpius dispermæ aut abortu monospermæ, basi imperforatæ. *Radicula* supera. *Cotyledones* carnosæ, planiusculæ.—Herbæ *Europææ, subglaucescentes.* Folia *radicalia in petiolum attenuata, caulina cordato-amplexicaulia.* Flores *in racemos foliaceos subcymbosos dispositi, flavi, sæpe purpureo-maculati. De Cand.*

Cerinthe *retorta;* glaucescens, foliis eciliatis, pedicellis calyce brevioribus, calycis lobis angustis subæqualibus, corollis clavato-cylindraceis apice subadscendentibus ad faucem constrictis, lobis apice acutis lævibus, antheris filamento longioribus corollam adæquantibus. *De Cand.*

Cerinthe retorta. *Sm. in Sibth. Fl. Græca, v.* 2. *p.* 60. *p.* 171. *Prodr. v.* 1. *p.* 120. *Reichenb. Fl. n.* 2326. *Icon. Critic. v.* 8. *f.* 981. *De Cand. Prodr. v.* 10. *p.* 4.

Admirable as is the figure of this plant in the 'Flora Græca,' it scarcely does justice to the colouring of it as cultivated in the open air at Kew. The young bracteas in our plant are more highly tinted, the corollas are more protruded, and show more of the yellow colour of the tube, and this is tipped with dark purple. The leaves are glaucous-green, and spotted like those of a *Pulmonaria.* It is a native of Caria, in the Peloponnesus, where it was found by Sibthorpe; and in wooded places in Dalmatia according to Viviani. Lovers of hardy plants will do well to rear this in the open borders of their gardens. It is an annual, and may be increased by seeds, and should be planted in tufts. Our plant was raised from seeds sent to us by Mr. Thompson, of Ipswich.

Descr. A herbaceous *plant*, one to one and a half or two feet high, glabrous, glaucous, branched, chiefly above; *branches* terete, suberect. *Lowest leaves* obovato-spathulate petiolate, *superior* ones obovate and amplexicaul, the base having two rounded auricles; in the branches which support the racemes of flowers

the leaves gradually pass into ovate or obovate imbricated *bracteas*, of which the younger superior ones are purple, and these are crowded about the flowers. *Racemes* terminal, recurved (scorpioid). The *flowers*, when perfect, are protruded beyond the bracteas. *Calyx* large, foliaceous, of five very unequal *sepals*, the outer one much the largest and bracteiform, ciliato-serrate. *Corolla* tubular-clavate, curved downwards above the middle, then ascending, inflated below the contracted mouth, lemon-yellow, the apex deep-purple, the *limb* small, of five spreading teeth. *Stamens* included. *Ovary* of four lobes. *Style* filiform, shorter than the corolla. *Stigma* capitate.

Fig. 1. Flower. 2. Calyx and pistil. 3. Pistil :—*magnified.*

W Fitch, del. et lith.

Vincent Brooks, Imp.

Tab. 5265.

CHYSIS AUREA; var. *Lemminghei.*

Golden-flowered Chysis; var. Lemminghei.

Nat. Ord. Orchideæ.—Gynandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5186.)

Chysis *aurea;* bracteis parvis concavis ovario brevioribus, sepalis petalisque ovatis obtusis, labelli lobis lateralibus obtusis, intermedio majore carnoso bilobo, hypochilio plicato, lamellis 5 carnosis subæqualibus parallelis basi pubescentibus et utrinque aliis minoribus (potius venis elevatis), columna latissima carnosa cymbiformi antice pubescente. *Lindl.*

Chysis aurea. *Lindl. Bot. Reg. t.* 1937. *Hook. Bot. Mag. t.* 3617.

β. *maculata;* sepalorum petalorumque parte superiore aureo-fusco tincta, labelli lobo medio purpureo-maculata.

Chysis aurea β. *Hook. Bot. Mag. t.* 4576.

γ. *Lemminghei;* floribus albis purpureo tinctis, labello flavo intense purpureo-maculato striatoque. (Tab. Nostr. 5265.)

Chysis Lemminghei. *Linden, Cat.*

Slight modifications of form and colour in plants are too often considered characteristics of specific differences; in none more so than among the Orchideous family. We know not if our present variety has been anywhere figured and described; but it passes as a *Chysis* from Central America, distributed under the name of *C. Lemminghei* (in compliment, we believe, to Count Lemminghe): and certainly, if colour of flower were alone the point to be considered, this might well be supposed different from one whose colours suggested the specific name of *Chysis aurea*, given to the plant figured by Dr. Lindley, Bot. Reg. t. 1937, where the purple colour is confined to a few remote streaks on the inside of the pale-coloured labellum. Our *C. aurea* (Bot. Mag. t. 3617) has the purple streaks nearly obsolete. Our *C. aurea*, var. *maculata* (see our Tab. 4576), has more distinct purple streaks than those previously figured, and a deep-tawny blotch occupying the upper half of the sepals and

petals. *C. Lemminghei* of Linden, here figured, with a structure of flowers, pseudobulbs, and foliage, identical with the others, has a nearly white or cream-coloured flower; anything of a golden colour is confined to the lip: but there are purple or lilac blotches on the sepals and petals, and very deep and copious purple streaks and spots in the inside of the labellum. Thus I am compelled to consider all varieties of one and the same species, *C. aurea*, Lindl. Our plants were derived from Mr. Schiller, of Hamburg.

Fig. 1. Column and anther. 2. Labellum :—*magnified.*



Vincent Brooks, Imp.

Tab. 5266.

ARNEBIA Griffithii.

Griffith's Arnebia.

Nat. Ord. Boragineæ.—Pentandria Monogynia.

Gen. Char. Calyx fere 5-partitus, basi post anthesin subcampanulatus. *Corolla* tubo elongato, infundibuliformis, fauce nuda, lobis subrotundis. *Antheræ* tubo insertæ, inclusæ. *Stylus* apice bifidus et stigmata ideo 2 subrotunda sæpius subbifida et in massam subglobosam 4-lobam aggregata. *Nuculæ* ovatæ, basi truncatæ, imperforatæ.—Herbæ *orientales*, *habitu* Lithospermorum, *sed* stigmate *dicephalo nunc 4-lobo distinctæ. De Cand.*

Arnebia *Griffithii;* annua, radice verticale fusca, caulibus 1 pluribusve pumilis erectis simplicibus vel parce ramosis longe et dense albo-setosis strigosis, foliis oblongo-lanceolatis obtusis basi (radicalibus) longe attenuatis utrinque setis brevibus tuberculo lato calcareo insidentibus hirsutis, floralibus anguste lanceolato-linearibus calyces æquantibus, spicis secundis densiusculis, calyce adpresse setoso fere ad basin usque in lacinias apice lineari-subulatas partito, corollæ flavæ tubo extus hirto calyce duplo longiori apice sensim in limbum hypocrateriformem ampliato, limbi lobis ovatis, antheris fauci obsolete plicatulæ insertis, stylo apice bipartito stigmatibus capitatis, nuculis . . . *Boiss.*

Arnebia Griffithii. *Boiss. Diagnos. Plant. Orient. Nov. Ser.* 2. *n.* 2. *p.* 135.

In 1860, General Perronet Thompson, of Eliot Vale, Blackheath, was so good as to send to me seeds of a remarkable Boragineous plant, from his son Lieut.-Colonel Thompson, commanding the 7th Dragoon Guards at Seealkote; obtained from the Murree Hills, North-western India. The flowers of the plant sent with the seeds were evidently those of a Boragineous plant, of a rich orange or tawny-yellow, remarkable for five deep purple spots, "understood to be the impression of the five fingers of the prophet Mahomet." Some of these seeds eventually germinated, and the plant proved to be a species of *Arnebia*, first discovered in Cabul by the late Mr. Griffith, and lately described, from specimens in our herbarium, by M. Boissier, in the work above quoted. The genus *Arnebia* is closely allied to *Litho-*

spermum, differing chiefly in the nature of the stigmas. A species closely allied to this, we may remark, *Arnebia echioides*, De Cand., has been figured by us at our Tab. 4409, a native of the Caucasian and Armenian Alps. Our present plant, however, has narrower leaves, smaller flowers, of a more decidedly yellow colour, a differently shaped calyx, and a longer corolla. The five spots, above mentioned, upon the corollas, become less distinct as the flowering season advances, and eventually disappear. We observe in the flowers the stamens are placed sometimes near the middle of the tube, and then the style is elongated; sometimes near the faux of the tube, and then the style is short, and the pistil appears abortive.

Fig. 1, 2. Flowers. 3. Flower, with the stamens near the middle of the tube. 4. Tube of another corolla, with the stamens inserted near the faux:— *magnified.*



Tab. 5267.

ARISÆMA PRÆCOX.

Early-flowering Arisæma.

Nat. Ord. Aroideæ.—Monœcia Monandria.

Gen. Char. (*Vide supra*, Tab. 4388.)

Arisæma *præcox*; foliis binis trifoliolatis, foliolis ovatis sessilibus longe subulato-cuspidatis, spatha extus brunneo- et albo-striata galeato-fornicata, fauce anguste dilatata, galea cucullata in lobum late ovatum verticaliter descendentem cuspidulo subulato reassurgente auctum producta, spadice inclusa, appendice subcylindrica stipitata.

Arisæma præcox. *De Vriese. C. Koch, Berl. Gart. Zeit.* 1857, p. 85. *Schott, Prod. Syst. Aroid. p.* 32.

This pretty plant was sent to the Royal Gardens by Professor Miquel of Utrecht. It is a native of Japan, in the Gotto Archipelago, and is perhaps only a variety of *S. ringens*, Schott (*A. Sieboldii*, De Vriese), under which name indeed we received it. It is also nearly allied to the North American *Arisæma atrorubens*, Bl. (*Arum triphyllum*, Linn.), figured at Tab. 950 of this Magazine. It appears to be easily cultivated, and flowers readily in spring, if then removed from a cool pit to the stove.

Descr. *Root* rather tuberous, with thick, fleshy fibres. *Leaves* two, springing from the root; *petiole* terete, with membranous stipules. *Leaflets* three, ovato-oblong, acuminate, and produced into a filiform point. *Nerves* numerous, arcuate. *Peduncle* short. *Spathe* erect, and cylindrical below; then arching suddenly over, and again contracting into a rather small orifice, with broad, membranous, reflexed margins; cylindrical portion and hood above streaked with green and white bands; the orifice and lips deep purple; apex acuminate and shortly caudate. *Spadix* erect; antheriferous portion short, with pedicelled, four-

lobed, purple *anthers;* upper portion cylindric, blunt, shortly stipitate, lobed at its base, pale yellow-green.

Fig. 1. Vertical section of the spatha, showing the entire spadix. 2. Spadix removed from the spatha:—*nat. size.* 3, 4. Vertical and side views of the anther,—*magnified.*

Tab. 5268.

SPIGELIA splendens.

Brilliant Spigelia.

Nat. Ord. Loganiaceæ.—Pentandria Monogynia.

Gen. Char. Calyx 5-partitus, persistens. *Corolla* hypogyna, infundibuliformis, limbi 5-fidi laciniis æstivatione valvatis. *Stamina* 5, medio v. summo corollæ tubo inserta, inclusa v. rarius exserta. *Ovarium* 2-loculare; ovulis in placentis basilaribus stipitatis plurima; *stylo* terminali infra stigma subcapitatum v. concavum articulato. *Capsula* didyma, dicocca, basi circumscissa, coccis bivalvibus. *Semina* pauca, cuneata. *Embryo* albuminosus, minimus.—Herbæ, *v.* suffrutices, *Americanæ.* Folia *opposita*, petiolis *basi connatis.* Flores *terminales spicati, secundi.*

Spigelia *splendens*, herbacea, basi frutescens pubescente-pilosa, ramis teretiusculis, foliis amplis obovato-oblongis acuminatis in petiolum attenuatis læte viridibus, pedunculis validis, spica multiflora, floribus magnis, sepalis subulatis, corolla elongata coccinea, antheris exsertis.

Spigelia splendens. *Hort. Wendland.*

Of this beautiful plant we can find no published description, and we are unaware from what country it was procured. In the foliage it resembles the *S. speciosa* of Mexico, and in the flowers *S. pedunculata* of the Andes of Quindiu. Nothing can exceed the deep rich red colour of the spike, which renders it a most conspicuous and desirable addition to our stove plants.

Descr. A perennial *herb*, with the stem woody below. Our plant flowered when about one foot high. *Stems* nearly terete covered with loose spreading hairs. *Leaves* four to five inches long, contracted into a short *petiole*, obovate-oblong, acuminate, dark-green with prominent veins, slightly hairy. *Spikes* several towards the apex of the stem, stout, erect, each bearing an elegantly recurved spike of numerous two-ranked, closely set, bright scarlet flowers, upwards of one inch long. *Calyx* small, with subulate teeth. *Corolla* cylindric, slightly inflated upwards: *limb*

short, patent. *Stamens* small; *anthers* only exserted. *Ovary* globose. *Style* slender, jointed below the middle, above which the stigmatic portion is longer than the lower. *Stigma* two-lobed.

Fig. 1. Flower. 2. Corolla laid open. 3. Pistil. 4. Transverse section of ovary:—*all magnified.*

Tab. 5269.

HOYA Shepherdi.

Mr. Shepherd's Hoya.

Nat. Ord. Asclepiadeæ.—Pentandria Digynia.

Gen. Char. (*Vide supra*, Tab. 5148.)

Hoya *Shepherdi;* scandens, caule tereti papilloso, foliis 6-uncialibus linearibus v. lineari-lanceolatis deflexis crasso-carnosis supra atro-viridibus canaliculatis subtus pallidioribus semiteretibus aveniis ad petiolum geniculatis, petiolis brevibus teretibus, pedunculis subaxillaribus clavatis, umbellis plurifloris albo-roseis, pedicellis clavatis, calycis lobis brevibus triangularibus, corollæ lobis præcipue ad marginem villosis, coronæ foliolis erecto-patentibus.

We owe the possession of this remarkable species of *Hoya* to Mr. Short, who communicated it under the MS. name of *H. Shepherdi* to the Royal Gardens, where it flowered in June, 1861; but we are unable to find any described species with which it satisfactorily accords, though copious specimens exist in our herbarium, gathered by Drs. Hooker and Thomson in Sikkim-Himalaya, at elevations of 3000 to 4000 feet, and in Khasya. In some respects it agrees with the *Hoya longifolia* of Wallich, in Wight and Arnott's Contrib. p. 36, and of Decaisne, in De Candolle, Prodr. v. 8, p. 637; but the shape of the foliage and the large size of the flowers are quite at variance with our plant, the corona of which is much more erect. The flowers are small, and bear no very distant resemblance to those of *Hoya Bella*, figured at our Tab. 4402; but the leaves constitute its chief distinguishing character: they are as it were geniculated at the apex of the rather short, terete petiole, or bent down suddenly at an angle, and thus become pendent: they are from two to (mostly) six inches long, not more than four lines wide, shortly acuminated at the apex, very dark on the upper side, and there canaliculate for their whole length, paler.

and semiterete beneath. The umbel of flowers is about two inches in diameter, and the corollas of a delicate white and rose colour.

Fig. 1. Flower. 2. Calyx and ovaries. 3. Ovaries, and the staminal crown :—*more or less magnified.*



Tab. 5270.

BILLBERGIA bivittata.

Ribbanded Billbergia.

Nat. Ord. Bromeliaceæ.—Hexandria Monogynia.

Gen. Char. Perigonii superi sexpartiti *laciniæ exteriores* calycinæ, æquales, ecarinatæ, erectæ vel spiraliter convolutæ, aristatæ vel muticæ, apice hinc oblique dilatatæ, *interiores* petaloideæ, exterioribus multo longiores, apice patentes v. erectæ, intus basi squamosæ v. biaristatæ, rarius nudæ. *Stamina* 6, epigyna; *filamenta* filiformia, tria plerumque perigonii laciniis interioribus adnata; *antheræ* ovatæ, dorso affixæ, incumbentes v. suberectæ. *Ovarium* inferum, triloculare. *Ovula* plurima, e loculorum angulo centrali pendula, anatropa. *Stylus* filiformis; *stigmata* 3, petaloidea, convoluta v. linearia, crispa. *Bacca* subglobosa, trilocularis. *Semina* plura, nuda vel ad umbilicum filo gracili appendiculata.—Herbæ *Americanæ tropicæ, sæpius super arborum truncis pseudo-parasiticæ, exscapæ vel scapigeræ;* foliis *ligulatis, linearibus vel ensiformibus, ut plurimum spinuloso-serrulatis;* floribus *spicatis, paniculatis vel racemoso-paniculatis;* spathis floralibus *nunc magnis, nunc parvis vel amplis, coloratis. Endl.*

Billbergia *bivittata;* acaulis, foliis coriaceis firmis lanceolatis acuminatissimis argute serratis undulatis fusco-viridibus lineis duabus albo-vittatis, spica inter folia sessili, floribus albis, petalis calycinis imbricatis mucronatis, corollinis spathulatis.

Billbergia vittata. *Linden Cat.*

This pretty plant came to us under the name of *Billbergia vittata*, from Linden, in 1859. It is certainly not the plant of that name described by Beer in his review of the Order, nor is it the *B. Moreliana vera* of Lemaire's 'Jardin Fleuriste,' and Paxton's 'Flower Garden,' both of which Beer quotes under *vittata*. It is evidently a near ally of *Tillandsia acaulis*, Lindl. (Bot. Reg. t. 1157); but as the calyx is distinctly superior, it cannot be referred to that genus as characterized in Endlicher. Probably it should be referred to Beer's genus *Chryptanthus*, of which no generic characters have been published by that author. It is, no doubt, a native of South America, but we are not aware of its exact country.

Descr. *Plant* almost stemless. *Leaves* closely set just above

the root, spreading, recurved, about a span long, and one to one and a half inch broad, rather undulate, acutely toothed at the margin, under surface dull brown, upper green, with two broad, buff, longitudinal bands, which pass into dull red at the base of the leaf. *Flowers* collected into a short dense spike, which is wholly sunk amongst the leaves, white. *Bract* oblong, lanceolate, acute. *Perianth* superior. *Calyx* of three cuneate segments, each obliquely expanded, and mucronate at the apex. *Corolla* of three, white, spreading, spathulate lobes. *Stamens* six, three attached to the petals, short, with sterile(?) anthers in the pistillate flowers. *Pistil* absent in some flowers; where present filiform, expanding into three patent lobes.

Fig. 1. Flower. 2. Petal and stamen. 3. Pistil:—*magnified*.

W Fitch. del et lith

Tab. 5271.

CRASPEDIA Richea.

Glaucous-leaved Craspedia.

Nat. Ord. Compositæ.—Syngenesia Æqualis.

Gen. Char. Capitula 5-flora, homogama, in glomerulum subrotundum bracteis sub quoque capitulo sitis cinctum aggregata, rachidi cylindracea lanata insidentia, substipitata. *Receptaculum* angustum, margine paleis hyalinis integris onustum. *Corollæ* tubulosæ, late 5-dentatæ. *Antheræ* basi setiferæ. *Stigmata* inclusa. *Achenium* oblongum, villosum. *Pappus* 1-serialis, setis filiformibus, plumosis.—Herbæ *Australasicæ, perennes.* Folia *in parte caulis inferiore conferta, alterna, lanceolato-linearia, integerrima.* Caulis *erectus, subnudus, apice* 1-*cephalus.* Flores *sulphurei. De Cand.*

Craspedia *Richea*; foliis lanceolato-linearibus vel lanceolatis, radicalibus basi attenuatis pedicellatis, caulinis sessilibus, cauleque glomerulo solitario terminato pilosis v. glabratis.

Craspedia Richea. *Cassini, Dict. v.* 2. *p.* 353. *De Cand. Prodr. v.* 6. *p.* 152. *Lehm. Pl. Preiss. v.* 1. *p.* 443.

Richea glauca. *Labill. Voy. Lapeyr. v.* 1. *p.* 187. *t.* 16, *et Nov. Holl. v.* 2. *p.* 123.

Craspedia glauca. *Lindl. Bot. Reg. t.* 1908. *Spreng. Syst. Veget. v.* 3. *p.* 411.

Craspedia pilosa. *Benth. in Endl. Enum. Pl. Hugel. p.* 62. *n.* 205. *Spreng. Syst. Veget. v.* 3. *p.* 441.

Podosperma pedunculare, *Reichenb. in Sieb. Coll. Nov. Holl. n.* 184.

This is one of the many remarkable genera of *Compositæ* peculiar to Australia. It is by no means unornamental, and much more worthy of cultivation than the *Craspedia macrocephala* which we figured at our Tab. 3415. Here the large and globose heads are yellow instead of white. It seems to have an extensive geographical range, for it inhabits Van Diemen's Land and South-eastern Australia, and probably extends along the south coast to Swan River, where it is recorded as a native in Preiss's 'Swan River Plants.' It is a hardy annual, and we are indebted for seeds of it to Mr. Thompson, of Ipswich. It flowers in June.

Descr. The general aspect of the herbage is that of a *Gnaphalium*, and it is clothed with soft white hairs, though said to

be sometimes glabrous. *Stems* a foot or more high, angular, erect. *Lower* and *radical leaves* spathulato-lanceolate, tapering below into a moderately long petiole: those higher up become gradually smaller and sessile, and often sphacelate at the apex. The *head* of flowers is an inch and a half broad, terminal, solitary, globose, of a fine yellow colour, involucrate at the base. *Involucre* of several green foliaceous leaves, reflexed and sphacelate at the apex. This head or capitulum is compound, that is, made up of a number of lesser heads or *capitula*, which are pedicellate and also involucellate; *involucellum* of four to five oval or obovate leaflets, and there is also a *bractea* at its base. *Florets* all tubular and bracteolate. *Ovary* cylindrical, silky, crowned with a hairy *pappus*, of which each hair is plumose. The *style* is a little exserted and the branches with the stigmas entirely so: the base of the style is considerably thickened.

Fig. 1. One of the lesser heads which compose the large capitulum. 2. Bracteole and single floret with its plumose pappus. 3. Plumose hair. 4. Style and stigmas. 5. Branches of the style;—*all more or less magnified.*

Vincent Brooks, Imp.

Tab. 5272.

HOYA (Otostemma) lacunosa, var. *pallidiflora*.

Furrowed Hoya, pale-flowered var.

Nat. Ord. Asclepiadeæ.—Pentandria Digynia.

Gen. Char. Calyx brevis, pentaphyllus. *Corolla* rotata, plus minusve alte 5-fida, laciniis planis vel reflexis, æstivatione valvata. *Corona* staminea 5-phylla; *foliolis* depressis, patentibus v. plus minusve gynostegio verticaliter adnatis, carnosis, angulo interiore in dentem antheræ incumbentem producto. *Gynostegium* breve. *Antheræ* membrana terminatæ. *Massæ pollinis* basi affixæ, oblongæ, compressæ, conniventes, sæpius margine pellucidæ. *Stigma* muticum, cum papilla media obtusa v. subapiculatum. *Folliculi* læves v. appendiculis instructi, subpolypteri. *Semina* comosa.—Frutices *vel* suffrutices *Indici vel Moluccani, rarissime Africani, volubiles, scandentes aut decumbentes;* foliis *carnosis vel coriaceis vel membranaceis;* floribus *umbellatis;* umbellis *extra-axillaribus, sæpius multifloris. Decne.*

Hoya (*Otostemma*) *lacunosa;* scandens radicans, foliis mediocribus carnoso-coriaceis ellipticis basi apiceque acuminatis petiolatis obscure penninerviis nervis immersis, pedunculis solitariis interpetiolaribus, umbellis multifloris planis, laciniis calycinis marginibus carinaque denticulatis, corollæ rotatæ carnosæ velutino-villosæ lobis triangularibus demum reflexis, coronæ staminæ foliolis navicularibus concavis.

Hoya lacunosa, *Blume, Bijdr. p.* 1063. *Decne. in De Cand. Prodr. v.* 8. *p.* 638. *Blume, Rumphia, v.* 4. *t.* 184. *f.* 2. *Hook. Bot. Mag. t.* 4826.

Otostemma lacunosum, *Blume, Rumphia, l. c. p.* 30. *Mus. Bot. Lugd. Bat. v.* 1. *p.* 59. *f.* 11. *Walp. Annal. Bot. Syst. v.* 3. *p.* 65.

β. *pallidiflora;* foliis enervibus, floribus decoloratis. (Tab. Nostr. 5972.)

A native of Java, and notwithstanding the obsolete nervation of the leaves (which latter are broader than usual at their base), and the almost colourless flowers, cannot otherwise be distinguished from the *Hoya lacunosa* of Blume, and our Tab. 4826, to which we refer for a more full description. Indeed, had it not been that the figure was engraved, and the plates coloured, before the close similarity was detected, we

should hardly have deemed the present variety worthy of having a place in this work, while our gardens abound so much in plants of greater interest.

Fig. 1. Inferior view of a flower. 2. Superior ditto:—*magnified.*



Vincent Brooks, Imp.

Tab. 5273.

MUTISIA DECURRENS.

Decurrent-leaved Mutisia.

Nat. Ord. Compositæ: Mutisieæ.—Syngenesia Superflua.

Gen. Char. Capitulum heterogamum, inæqualiflorum, falso radiatum. *Involucrum* pluriseriale; *squamis* integerrimis, planis, imbricatis, *exterioribus* brevioribus. *Receptaculum* nudum. *Fl. disci* hermaphroditi, *radii* fœminei. *Corollæ* bilabiatæ tubo 5–10–15-nervio, in disco subtubulosæ, fauce a tubo non distincta; *limbi* labio ext. 3-dent., inter. bipartito lobis linearibus; *radii labio exteriore* amplo, ligulæformi, apice 3-dentato; *interiore* bipartito lobis linearibus, interdum deficiente. *Antheræ* in fl. radii nullæ, in fl. disci exsertæ, longissime caudatæ; *filamenta* papillosa, in *fl. radii* aut antheris orbatæ aut nullæ. *Stylus* cylindraceus, basi tumidus, glaber, breviter 2-fidus. *Achenium* rostratum, costatum, glabrum, longum. *Pappus* biserialis, plumosus, longus, æqualis, paleis basi conferruminatis et ideo una caducis.—Frutices, *sæpius scandentes, Austr.-Americani.* Folia *alterna, pinnatisecta aut indivisa;* petiolo communi *aut* nervo medio *in cirrhum sæpius apice producto.* Capitula *solitaria, pedunculata.* Flores *purpurei, rosei, aut flavi.*—Numerus nervorum corollarum variat, nempe quintus ubi de more ordinis nervuli marginales nervorum concreti, decimus ubi nervuli marginales distincti, quindecimus ubi præter nervulos marginales distinctos adsunt nervuli mediani. *De Cand.*

Mutisia *decurrens;* caule scandente subangulato foliorum decurrentiis subalato, foliis sessilibus utroque margine decurrentibus lanceolato-linearibus planis integris integerrimisque, inferioribus ad basin paucidentatis, nervo in cirrhum bifidum producto, involucri subcylindracei squamis ovatis inappendiculatis appressis acutis infimis patentibus.

Mutisia decurrens, *Cav. Ic. v.* 5. *p.* 65. *t.* 467. *De Cand. Prodr. v.* 7. *p.* 6. *Gay, Fl. Chil. v.* 3. *p.* 263.

Mutisia heliantha. *Pœpp. Exsicc.* 2840 (*fide De Candolle*).

The genus *Mutisia* is exclusively of South American origin, and consists of some forty species, remarkable for the peculiar habit, generally scandent, with cirrhose leaves, and for the great size and rich colouring of the flowers; of which eleven kinds inhabit Peru, Ecuador, and Brazil, and these are distinguished by their pinnated and Vetch-like leaves: the rest appear to be almost

exclusively inhabitants of the Chilian Andes, and these have simple or undivided leaves, of a harsh and rigid texture, still furnished with their peculiar tendrils at the extremity. We have long ago (Hook. Bot. Miscellany, v. 1. p. 7) called attention to the desirableness of introducing many of these to our gardens. One Brazilian species of the pinnated-leaved section was introduced to Kew Gardens so long ago as 1827, and was the first plate given in the Second Series of our 'Botanical Magazine,' in 1827 (Tab. 2705); but that one is perhaps the least ornamental of them all. The *Mutisia grandiflora* of Humb. et Bonpl. Pl. Æquinoct. t. 50, has capitula six inches long and five inches broad! Of the second section, from Chili, with simple leaves, a curious, rather than handsome species, was in cultivation in England, *M. latifolia*, Don, figured in Sweet's Brit. Fl. Gard. v. 3. t. 288; but it has, as far as we know, ever since been lost to our gardens. We wish it may be permanently replaced by the present truly splendid species, of which we have received flowering specimens from Messrs. Veitch and Sons, of the Exeter and Chelsea Nurseries, in July of the present year, 1861. This plant has stood the last severe winter unharmed in the open air at Exeter, without shelter. It is a native of the Andes of Chillan (*Mr. Pearce*, who forwarded plants to the Messrs. Veitch), and of the Cordillera of Antuco (*Pœppig*); and is assuredly, if not the largest, the handsomest-flowered species of the whole genus. It is to be feared that the fruticose plants of the high and dry Andes of Chili are difficult of cultivation, and require a very peculiar treatment.

Descr. Climbing to the height of a few feet, with slightly branched *stems*. *Leaves* remote, alternate, oblong-lanceolate, acuminate, quite entire, of a harsh and rigid texture, dark-green above, pale and glaucous beneath, costate, distantly and rather obscurely penniveined, veins horizontal, forked at the apex, and there anastomosing with the adjacent ones; the apex is terminated with a bifid *tendril*, the bases of the leaves are much and gradually decurrent, so as to form wings on the stem and branches. *Flower* (or rather *capitulum*) very large, solitary, four and a half inches in the spread of the ray, which is of a brilliant orange-colour. The *involucre* very large, subcylindrical, broader at the base, where the scales are lax; the rest of them (all being ovate) are appressed, inappendiculate, blue-green, tinged with purple.

Fig. 1. Floret of the ray,—*natural size.* 2. Hair from the pappus,—*magnified.* 3. Floret of the disk,—*natural size.* 4. Hair from the ray,—*magnified.* 5. Stigma,—*magnified.*



W Fitch, del et lith

Vincent Brooks Imp

Tab. 5274.

SALVIA cacaliæfolia.

Cacalia-leaved Sage.

Nat. Ord. Labiatæ.—Diandria Monogynia.

Gen. Char. *Calyx* ovatus, tubulosus v. campanulatus, bilabiatus; *labio superiore* integro v. tridentato, *inferiore* bifido, fauce intus nuda. *Corollæ tubo* incluso vel exserto, æquali, ventricoso vel ampliato, intus nunc piloso-annulato, nunc nudo vel basin in latere inferiore processubus vel dentibus 2 instructo; *limbo* bilabiato; *labio* superiore erecto v. rarius patente, breviore v. longiore, lobis lateralibus oblongis vel rotundatis, patentibus, reflexis vel contorto-erectis, medio plerumque latiore, integro v. emarginato. *Staminum* superiorum rudimenta nulla, vel parva, claviformia; *fertilia* (inferiora) 2, prope faucem tubi inserta; *filamenta* brevia, subhorizontalia vel rarius erecta, apice cum anthera articulata et supra articulationem plerumque breviter producta, rarissime subcontinua. *Antheræ* dimidiatæ. *Connectiva* elongata, linearia, transverse cum filamento articulata, postice sub labio superiore corollæ adscendentia et apice loculum fertilem linearem adnatum vel versatilem ferentia, antice deflexa vel erecta, nunc loculum alterum subconformem minorem polliniferum vel difformem cassum gerentia, nunc dilatata vel rarius brevissima, acuta, libera vel sæpius variis nodis inter se connexa v. connata. *Ovarii discus* antice tumens, in glandulam lobis subæqualem. *Stylus* adscendens, apice bifidus, lobis nunc subulatis, æqualibus, vel superiore longiore, nunc inferiore vel utroque rotundato dilatato complanato. *Nuculæ* ovoideo-triquetræ, siccæ, glabræ, plerumque lævissimæ.—*Genus vastum, fere in omnibus regionibus terræ obvium, habitu et inflorescentia magnopere varium, semper antherarum structura agnoscendum. Benth. in De Cand.*

Salvia (§ Calosphace) *cacaliæfolia;* caule herbaceo erecto pubescente, foliis petiolatis latis deltoideis basi angulatis late subhastato-cordatis crassiusculis supra pubescentibus subtus molliter villosulis rufescentibus v. albidis, floralibus parvis, racemis ramosis, verticillastris bifloris, calycis campanulati pilosuli dentibus aristato-acuminatis, superiore integro vel tricuspidato, corolla pubescente calyce pluries longiore, tubo latissimo, stylo glabro. *Benth.*

Salvia cacaliæfolia. *Benth. in De Cand. Prodr. v.* 12. *p.* 348.

The present handsome *Sage* is one of 407 species described by Mr. Bentham in the twelfth volume of De Candolle's Prodromus, and belongs to his section *Calosphace*, which of itself includes 144 species that cannot, the author observes, be subdivided into series with any very definite characters. In the

same group with the present is the well-known *Salvia patens* of our gardens, near which the present finds its place; nearer still, it approaches the *S. vitifolia*, Benth., but is distinguished from it by the more entire and generally acuminated leaves, by the shorter appressed pubescence on their upper, soft on the under, surface. The calyces, too, are larger. It is a native of Chiapas, one of the Mexican States, where it grows in pine-forests, and is therefore probably hardy; and it may perhaps be suited for bedding-out plants, where deep-blue flowers are in much request. Imported into Europe by Mr. Linden, to whom we owe our living plants at Kew.

Fig. 1. Side view of a flower. 2. Calyx and pistil. 3. Inner base of the corolla, laid open, showing the stamens. 4. Ovary, and swollen glandular disk:—*all magnified.*


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Tab. 5275.

GONATANTHUS sarmentosus.

Sarmentose Gonatanthus.

Nat. Ord. Aroideæ.—Monœcia Polyandria.

Gen. Char. Spathæ tubus brevissimus, persistens, apice contractus, et laminæ pars subsequens ventricosa quoque apice constricta, geniculatim cum reliqua lamina elongato-lanceolata hiante confluentes. *Spadix* exappendiculatus, brevis, ad spathæ geniculum tantum productus, inferne in tubo proprio spathæ ovariis obsitus, superne in laminæ ima ventricosa dense synantheris tectus, parte media subnudus vel synandrodiis depressissimus ornatus. *Ovaria* astyla, *placenta* fundifixa pluriovulata, *ovulis* in funiculo longulo decurvo erectis. *Stigma* depresse hemisphæricum. *Synandria* longe stipitata, loculis vertice aperientibus. *Baccæ* tubo spathæ a basi discedente et lateraliter aperiente primum obvallatæ, luteæ, diu sistentes. *Semina* orthotropa, longe funiculata, conico-ovoidea, epidermide succulenta crassa lutea obducta. *Testa* ferruginea, verruculosa. *Schott.*

Gonatanthus *sarmentosus.*

Gonatanthus sarmentosus. *Link, Kl. et Otto, Ic. Plant. Rar. Berl. p.* 33. *t.* 14.
Schott, Prodr. Syst. Aroid. p. 142.

Caladium sarmentosum. *Fisch. MS.*

This pretty Aroideous plant was separated from the genus *Caladium*, to which Dr. Fischer had referred it, by Dr. Klotzsch, under the name of *Gonatanthus*, derived from the geniculated character of the tube of the spatha; and adopted by Schott in his valuable works on *Aroideæ*. As yet, however, the present species alone is certainly known to belong to it; and this is a native of the Khasia and Himalaya Mountains, having been detected there by Baron Hugel, and Drs. Hooker and Thomson. Two dubious species, imperfectly noticed by Schott, are *G.? ornatus*, Schott, also from Khasia (Hooker fil. and Thomson), and *G. Griffithii*, Schott (Arum, *Sp. Griff. Notulæ*, v. 3. p. 144, *Icones*, v. 3. t. 164), gathered in Burmah by Griffith. Our plants, received from the Berlin Garden, flowered in the stove in May.

Descr. No stem. *Root*, or tuberous *rhizome*, sparsely fibrous,

frequently sending out *stolones*, which bear sheathing scales, and sometimes clusters of bulbs, which terminate in one to three long slender filaments. These stolones are probably more freely produced from non-flowering plants. Our own plants have not yet produced these: the former are represented by Klotzsch, l.c.; the latter in Schott's 'Genera Aroidearum,' t. 39. *Leaves* ovate, very acute, six to ten inches long, cordato-ovate, dark green above, pale beneath, entire, penniveined, with slender veinlets between, which meet and anastomose slightly: there is also an intramarginal veinlet. *Petiole* longer than the leaf, peltately inserted at some distance from the base. *Spatha* pedunculate, tawny-yellow, a span to a foot long, subulato-lanceolate, convolute, the very base tumid, then bent at an angle (geniculated), above that also tumid, but partially open, so as to expose to view the apex of the spadix. *Spadix* short, an inch and a half long, clavate, the base beset with *pistils*, the slender portion with imperfect *anthers*, the clubbed apex with perfect anthers of a purple colour, each opening by four pores.

Fig. 1. Spadix, removed from the spatha. 2. Anther. 3. Transverse section of ditto. 4. Pistil. 5. Transverse section of the ovary. 6. Vertical section of the same:—*more or less magnified.*



W Fitch del et lith

Brooks, Imp

Tab. 5276.

IMPATIENS FLACCIDA.

Soft-leaved Balsam.

Nat. Ord. Balsamineæ.—Pentandria Monogynia.

Gen. Char. Calycis pentaphylli colorati foliola inæqualia, posticum maximum, basi calcaratum, lateralia minora, antica minima vel obsoleta. *Corollæ* petala 5, hypogyna, calycis foliolis alterna, anticum maximum, suborbiculato-concavum, postica cum lateralibus minoribus per paria connata. *Stamina* 5, hypogyna, petalis alterna, ovarium arcte cingentia; *filamenta* superne coalita; *antheræ* introrsæ, biloculares, subconnatæ, longitudinaliter dehiscentes vel infra apicem subtransversim ruptæ. *Ovarium* sessile, oblongo-pentagonum v. teretiusculum, quinqueloculare. *Ovula* in loculis plurima vel pauca, angulo centrali superposita, inserta, uniseriata. *Stigma* sessile, quinquedentatum vel quinquefidum. *Capsula* oblonga, pentagona v. teretiuscula, superne uni-, inferne quinque-locularis, loculicide quinquevalvis; *valvis* medio semiseptiferis, a columna persistente elastice dissilientibus, sæpissime septicide bifidis, ab apice ad basim involutis, v. sursum revolutis, *endocarpio* cartilagineo. *Semina* in loculis plurima v. pauca, rarissime abortu solitaria, inversa. *Embryonis* exalbuminosi orthotropi *cotyledones* plano-convexæ; *radicula* obtusa, supera.—Herbæ *sæpissime annuæ, in Asia Orientali tropica et subtropica copiosæ, in Capite Bonæ Spei, America Boreali, Europa et Asia temperata raræ;* foliis *alternis, oppositis v. ternatis, lineari- vel lato-lanceolatis, serratis v. dentatis, rarissime omnibus radicalibus longe petiolatis, exstipulatis;* pedunculis *axillaribus, solitariis v. aggregatis, vel paucifloris. Endl.*

Impatiens *flaccida;* glabra herbacea, foliis alternis tenuiter membranaceis longe petiolatis elliptico-oblongis acuminatis basi in petiolum attenuatis crenato-serratis, petiolis parce glanduloso-setigeris, pedicellis solitariis binisve filiformibus folio brevioribus, sepalis lateralibus oblongo-lanceolatis anteriore plus duplo brevioribus, posteriore petalis subæquali, calcare filiformi (medio crassiore?) apice attenuato flore subduplo longiore, capsula elliptico-oblonga basi et apice attenuata glabra. *Arn.*

Impatiens flaccida. *Arn. Ind. Bals. in Hook. Comp. to Bot. Mag. v.* 1. *p.* 32. *Walp. Repert. Bot. v.* 1. *p.* 468. *Hook. fil. et Thoms. Balsamin. in Journ. of Linn. Soc.* 1860, *p.* 134. *Thwaites, En. Pl. Zeylan. p.* 65.

Impatiens pulcherrima. *Dalz. in Bot. Mag. t.* 4615?

Impatiens latifolia, var.? *Linn. Sp. Pl. p.* 1328. *An Wall. Cat. n.* 4737 *A?* (*Hook. fil. et Thoms.*).

Impatiens lucida. *Wall. Cat. n.* 4738 (*Herb. Henslow*).

A lovely species, of a most lovely and, as now known to us, very extensive genus, especially abounding in tropical India. Linnæus, in 1764, enumerated seven species as all that were

known to botanists. De Candolle, so late as 1824, in his 'Prodromus,' has only recorded thirty-one species, including *Balsamina*, now universally united with *Impatiens*. Dr. Arnott, scarcely ten years later, added twenty new species from India alone. Drs. Hooker and Thomson, in their valuable "Præcursores ad Floram Indicam, in the fourth volume of the Journal of the Proceedings of the Linnæan Society," have described ninety-six inhabiting India. It is true the characters are mostly drawn from dried specimens, and it must be confessed that the flowers of the *Balsamineæ* suffer much by the process of drying for the herbarium. It is this circumstance which renders it so difficult to ascertain whether the present plant be a form of Linnæus's *I. latifolia*, as intimated by Thwaites and Hooker fil. and Thomson, or not. Even with the opportunity of examining living specimens, so variable are many of the Balsams, that Dr. Hooker hesitates whether to consider the *Impatiens pulcherrima* of Dalzell in this work (*l. c.*) identical with our present species. It is indeed a very near ally, if not specifically the same; but, as Dr. Hooker observes, the latter is altogether a larger plant, the flowers much paler in colour, and with more of the lilac tint, the fructiferous pedicels are erect, the stem and petioles green, not a fine purple, as in our *I. flaccida*.

I. flaccida is a native of Ceylon, at elevations upon the mountains of from 4000 to 6000 feet, collected by Mrs. General Walker, Gardener, and Thwaites. A variety with slightly hairy pedicels and capsules, is considered to be a native of the Malay Islands and Moulmein; and if Dalzell's *I. pulcherrima* be the same, it is found in the Concan and perhaps other parts of the Madras peninsula.



W Fitch del. et lith.

Vincent Brooks, Imp

Tab. 5277.

SPIRANTHES cernua.

Drooping-flowered Spiranthes.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. Perianthium ringens. *Sepala* lateralia labello supposita, basi obliqua et in ovarium decurrentia; *dorsale* petalis subglutinatum. *Labellum* pediproductæ columnæ affixum, unguiculatum, raro sessile, oblongum, sæpius apice dilatatum, nunc trilobum, semper *callis* duobus infra medium instructum, columnæ adpressum, eique marginibus inflexis arcte adhærens. *Columna* basi arcuata et ovarii apicem oblique terminans, in pede producta, teres; *stigmate* ovato, in *rostellum* acuminatum, demum bifidum, aut obtusum, emarginatum, raro corneum, indivisum producto. *Anthera* dorsalis acuminata vel obtusa, nunc membrana apiculata, bilocularis; *clinandrio* utrinque membranaceo marginato. *Pollinia* 2, pulverea, bipartita; *glandulæ* communi oblongæ affixa.—Herbæ, *utrinque orbis, terrestres, sæpius parvifloræ et glanduloso-pubescentes;* radicibus *fasciculatis.* Folia *radicalia, nunc caulescentia, textura* Orchidis, *nunc omnino deficientia.* Flores *spicati, spirales. Lindl.*

Spiranthes *cernua;* tuberibus elongatis fasciculatis, foliis radicalibus spathulato-lanceolatis obscure 3–5-nerviis patentibus, caulinis sensin minoribus lanceolatis basi vaginatis, spica oblonga densa multiflora, bracteis flores æquantibus, floribus trifariam spiraliter tortis, sepalis pubescenti-glandulosis in unum ovatum cucullatum cohærentibus petala oblongo-spathulata includentibus, labello oblongo obscure trilobo basi biglanduloso, lobo medio lato sinuato reflexo, columna ovata birostrata basi glanduloso-barbata, ovario pyriformi triquetro glanduloso.

Spiranthes cernua. *Rich. Orchid. Annot. p.* 37. *Hook. Fl. Bor. Am. v.* 2. *p.* 202. *Lindl. Bot. Reg. t.* 823. *Gen. et Sp. Orchid. p.* 467. *Babington in Trans. Linn. Soc. v.* 19. *p.* 262. *t.* 32. *Asa Gray, Man. Bot. N. U. St. Illustr. p.* 448. *Elliott, Fl. of S. Carolina, v.* 2. *p.* 492. *Chapman, Fl. S. U. St. p.* 402. *Torrey, Fl. of N. York, p.* 283. *Tab.* 129.

Ophrys cernua. *Linn. Sp. Pl. p.* 1340.

Neottia cernua. *Willd. Sp. Pl. v.* 4. *p.* 75. *Sims, Bot. Mag. t.* 1568. *Sweet, Brit. Fl. Gard. v.* 1. *p.* 42. *Hook. et Arn. Brit. Flora, ed.* 7. *p.* 430.

Neottia gemmipara. *Sm. Eng. Fl. v.* 4. *p.* 36. *Engl. Bot. Suppl. t.* 2786.

Spiranthes gemmipara. *Lindl. Syn. Br. Fl. p.* 257. *Hook. et Arn. Brit. Fl. ed.* 8. *p.* 431. *Reichenb. Orchid. in Fl. Germ. t.* 477. *f. t.* (*copied from Engl. Bot.*)

Perhaps no Orchideous plant has remained so long in a state of

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doubt and uncertainty as the *Neottia gemmipara* of Sir James Smith. It was discovered rather more than half a century ago, that is, in August 1810, "near Castletown, opposite to Bearhaven, on the northern side of Bantry Bay, county of Cork, Ireland," by Mr. James Drummond, at that time Curator of the Cork Botanic Garden, and the same who so eminently distinguished himself by his botanical researches in Western Australia. We are not aware that another European locality has ever been detected. Strange to say, it appears to have attracted no public attention till 1828, when Sir James Smith described it in his English Flora, v. 4. p. 36, under the name of *Neottia gemmipara*, so called from some "buds, destined to flower the following year, formed among the leaves at the bottom of the flower-stalk." Lindley, in his 'Synopsis to the British Flora,' referred the plant correctly to *Spiranthes*, preserving the specific name, and sanctioning the species. A very unsatisfactory figure appeared in 1834, in the Supplement to 'English Botany,' t. 2786, from an imperfectly developed and probably dried specimen. In 1844, Mr. Babington read an excellent paper "On the *Neottia gemmipara* of Smith" to the Linnæan Society. In the preparation of that memoir, that gentleman consulted the Hookerian Herbarium, and I directed his attention to my numerous specimens of the North American *Spiranthes cernua* (Ophrys, *L.*), as probably identical with our Irish plant; and the result of his examination confirmed that opinion, and, as I had hoped, settled the question. Dr. Lindley, however, in a very able paper, read before the Linnæan Society in 1857, controverted this opinion, alluding to its close affinity with *S. Romanzoffiana** (so near that they may possibly be identical), retaining it however as a distinct species, peculiar to the south-east of Ireland, under the original name, *gemmipara*, observing, that "we must require very strong proof that a plant hitherto unknown, except in the south-east of Ireland, is the same as a common North American species." In reference to this remark, I may observe, that *Najas flexilis*, a plant "common in ponds and slow streams in

* With regard to the *Spiranthes Romanzofflana*, in point of *locality*, it may be ranked with what has been hitherto known of the *S. gemmipara*, that is, that only one station has been recorded for it, and only one person has been fortunate enough to see it, growing "in alveo turfoso convallium infimorum insulæ Unalashcæ," and that is Von Chamisso himself, to whom I am indebted for well-dried specimens. I could not undertake from them to say whether the plant be specifically distinct or not. They are smaller than *S. cernua*, and of much less robust habit; the flowers are still smaller in proportion, and narrower, more cylindrical, and the bracteas always much exceed the flowers in length. Ledebour, indeed, observes, "Habitus ob spicæ densitatem et bractearum magnitudinem in hoc genere maxime singularis." Reichenbach's three figures (*l.c.*) are very satisfactory representations of the natural size; but the analysis, being all done from the dried, cannot perhaps be so much depended upon.

the States and Canada, but which is exceedingly scarce in Europe," was discovered by Professor Oliver to be a native of Connemara, Ireland; and *Eriocaulon septangulare*, peculiar in Europe to the west of Ireland and of Scotland, is abundant in North America. Such views, entertained by so distinguished a botanist as Dr. Lindley, led Mr. Bentham, Dr. Hooker, and myself, to a further examination of the *Spiranthes* in question, on my receiving some living native specimens last year by the kindness of Lord Bandon. The result is, that the Irish *S. gemmipara* and the North-American *S. cernua* are identical in all particulars, as the accompanying figures of the Irish plant will testify.

In North America *S. cernua* has a most extensive range. I possess numerous specimens from Newfoundland in the east, on the mainland through the whole plains of the Saskatchawan, and the Lake of the Woods; across the Rocky Mountains to British Columbia and Vancouver's Island; from all the northern and middle United States; and it is recorded in the Floras of South Carolina and Georgia, and of the Southern States generally. If *S. Romanzoffiana* should prove to be identical with *S. cernua*, then its north geographical limit is Unalashka, in the Russian dominions, but geographically pertaining to America.

Tab. 5277. *Spiranthes cernua*, Rich., drawn from a living plant from Ireland. Fig. 1. Side, and fig. 2. front view of a flower. 3. Flower, from which the sepals and petals are removed. 4. Column, with anther, and base of the labellum. 5. View of column, from above. 6. Column, seen from beneath. 7. Side view of a column. 8 and 9. Pollen-masses:—*all more or less magnified.*



Tab. 5278.

STANHOPEA Bucephalus.

Bull-horned Stanhopea.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. *Perianthium* membranaceum, patentissimum, reflexum. *Sepala* libera, subundulata, mole sua ruentia. *Petala* conformia, angustiora. *Labellum* liberum, anticum; dimidio superiore (*epichilio*) convexo, inferiore (*hypochilio*) excavato. *Columna* longissima, petaloideo-marginata. *Anthera* bilocularis. *Pollinia* 2, elongata, fissa, *caudicula* cum glandula biloba stipitata breviore.—Epiphytæ *pseudobulbosæ*. Folia *plicata*. Scapi *radicales*, *vaginati*, *pauciflori*. Flores *maximi, magis minusve maculati. Lindl.*

Stanhopea *Bucephalus;* bracteis ovario subæqualibus, hypochilio unguiculato cymbiformi antice intruso apice carnoso aperte sulcato mutico basi longe angustato ecorni intus lævi extus bicarinato, epichilio subrotundato-ovato cuspidato integro breviore, cornibus gracilibus teretibus brevioribus, columna basi angustissima sursum alata. *Lindl.*

Stanhopea Bucephalus. *Lindl. Gen. et Sp. Orchid. n.* 2. *Bot. Reg.* 1843, *sub t.* 44, *et v.* 31. *t.* 24.

Epidendrum grandiflorum. *Humb. et Bonpl. Pl. Æquinoct. p.* 94. *t.* 27.

Anguloa grandiflora. *Humb. Bonpl. et Kth. Nov. Gen. et Sp. Am. v.* 1. *p.* 345.

This is perhaps the richest-coloured of all the species of the fine genus *Stanhopea*, having the ground-colour of a rich tawny-orange, marked with deep blood-coloured spots; it yields, too, like so many other of its congeners, a powerful fragrance, which would certainly be too strong for the drawing-room. To this species, no doubt, Dr. Lindley properly refers the *Epidendrum grandiflorum* of the Pl. Æquinoct. (Anguloa, *H. B. K.*), though in his Gen. et Sp. Orchid. he had considered that plant as synonymous with my *S. insignis* (Bot. Mag. t. 2948, 2949). Its nearest affinity is doubtless with *S. oculata* (Lindl. Bot. Reg. t. 1800), not yet figured in this work, "from which it differs in the form of the lip, and especially in the very short ovaries."

The species is a native of Ecuador, and was first detected by

Humboldt and Bonpland at Cuença. Hartweg found it at Paccha, a small village in the Andes, on the ascent from Guayaquil to Loxa, at an elevation of 6000 feet above the level of the sea, and by him it was sent to the Royal Horticultural Society of London, and secured to our orchid-houses. It flowered with us in August of the present year.

Fig. Column and lip,—*slightly magnified.*

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Tab. 5279.

VACCINIUM Imrayi.

Dr. Imray's Vaccinium.

Nat. Ord. Vacciniaceæ.—Octandria Monogynia.

Gen. Char. Calyx ovario adnatus; *limbo* libero 4–5-partito, rarius subintegro, partitionibus dentiformibus. *Corolla* campanulata aut urceolata, *limbo* 4–5-fido. *Stamina* libera, corollæ lobis numero dupla, partim ima basi corollæ, partim limbo calycis inserta. *Antheræ* biloculares, bitubulosæ, dorso biaristatæ aut muticæ, antice ad apicem tantum dehiscentes. *Stylus* erectus, strictus. *Stigma* truncatum. *Germen* inferum, *disco epigyno* plano aut convexo, lævo, limboque calycino coronatum, 4–5-loculare, *loculis* multiovulatis. *Bacca* pulposa aut exsucca, *calycis limbo* vestita, subglobosa, 4–5-locularis, *loculis* oligo- aut polyspermis. *Semina* parva, subangulata, fusca aut flavida.—Frutices *aut* suffrutices. Folia *sparsa, caduca aut persistentia.* Flores *axillares, solitarii, gemini, terni, fasciculati aut racemosi.* Corollæ *albidæ (virescentes) aut coccineæ. Klotzsch.*

Vaccinium (§ Scytanthemum) *Imrayi;* fruticosum glaberrimum, foliis brevipetiolatis sempervirentibus ovatis acuminatis integerrimis vel obsolete serratis penninerviis, corymbis multifloris axillaribus vel terminalibus, floribus lutescenti-viridibus, calycibus 5–6-dentatis, corollis crassissimis 5–6-fidis, laciniis ovatis erectis, marginibus involutis, antheris muticis.

Vaccinium Imrayi. *Hook. Ic. Plant. Rar. v.* 3. *t.* 292. *Walp. Repert. v.* 2. *p.* 723; *Annal. v.* 2. *p.* 1100. *Klotzsch in Linnæa, v.* 24. *p.* 61.

This is a remarkable-looking *Vaccinium*, native of the island of Dominica (not "St. Domingo," as stated by mistake by Dr. Klotzsch), and was sent to our garden, along with good specimens for the herbarium, by Dr. Imray of that island, its discoverer. Dr. Klotzsch, in his memoir on the Linnæan class *Bicornes*, published in the 'Linnæa,' *l. c.*, has deemed it worthy to form a section or group of the genus *Vaccinium* to which he has given the name *Scytanthemum*. It is a handsome evergreen *shrub*, two and a half to three feet high, with glossy coriaceous leaves, often three inches long. The *flowers* are large for the genus, and remarkable for their uniform yellow-green colour, unusual in this genus, and for the very carnoso-coriaceous tex-

ture of the *corollas*. These *flowers* form rather compact terminal or lateral leafy *corymbs*. Six is the ordinary number of divisions in the flower. The *stamens* and *style* are included. The *anthers* are of an orange-colour, muticous, upon broad filaments.

Fig. 1. Flower. 2. Pistil:—*slightly magnified.* 3. Two of the stamens,—*more magnified.*


1
2
3.

Tab. 5280.

HIGGINSIA REGALIS.

Royal Higginsia.

Nat. Ord. Rubiaceæ (Hedyotideæ).—Tetrandria Monogynia.

Gen. Char. Calycis tubus brevis, obovatus; *limbus* ad basin 4-dentatus, persistens. *Corolla* infundibuliformis, subcampanulata, tubo brevi, limbo 4-partito patente, fauce nuda. *Stamina* medio tubo inserta, *filamentis* brevibus, *antheris* ovatis inclusis. *Stigmata* 2, exserta. *Bacca* oblonga, subtetragona, bisulca, bilocularis, calyce coronata. *Placentæ* septo adnatæ. *Semina* in loculo quoque plurima, parva, aptera.—Suffrutices 3–4-*pedales*, ramis *obtuse tetragonis*. Folia *opposita aut verticillata, obovata aut oblonga, acuta*. Stipulæ *utrinque solitariæ, parvæ, acutæ, deciduæ*. Pedunculi *axillares, racemosi*, pedicellis *brevibus, unilateralibus*. Corollæ *rubentes. De Cand.*

Higginsia *regalis;* fruticosa robusta, ramis subsuccullentis obtuse tetragonis, foliis rotundato-ovatis subcoriaceis acuminatis integerrimis subarcte plicato-penninerviis glabris nitidis atro-viridibus subtus purpureo-rubris, stipulis triangularibus deciduis, floribus aggregatis subsessilibus.

Campylobotrys regalis. *Hort. Belg.*

In 1850 we received from Paris, and published at Tab. 4530 of this work, a South American plant under the name of *Campylobotrys discolor*, and not being able then to refer it with certainty to any known Rubiaceous genus, we retained the name as we received it, and drew up a character as well as our materials would permit. Since that has appeared, our friend Mr. Planchon has referred the *Campylobotrys discolor* to *Higginsia* (see Walpers's Annales Bot. Syst. v. 2. p. 792), and probably correctly so. We have now, from Mr. Linden, of the Belgian Gardens, received the beautiful plant here figured, with the name of "*Campylobotrys regalis*," but unfortunately with no mention of its native country nor indication of its being anywhere described or published. No plant better deserves to be known or is better worthy of cultivation in the stove. As it is evidently of the same genus as the *Higginsia discolor* of Planchon, we transfer it thither, only lamenting we have so little of its history to give.

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True, the *name* appears in Linden's Catalogue, n. 15, 1860, p. 3, but the notice accompanying it only relates to the beauty of the individual:—"Cette plante merveilleuse est considérée comme une de nos meilleures introductions, et ce n'est pas peu de dire, lorsqu'on cite parmi celles-ci des plantes comme le *Cyanophyllum magnificum*, le *Begonia Rex*, le *Gesneria cinnabarina*, etc. Nous ne craignons même pas d'être taxé d'exagération en affirmant que ce *Campylobotrys* éclipse le *Cyanophyllum magnificum* lui-même, par la beauté extraordinaire des feuilles, que nous ne saurions mieux comparer qu'à celles des plus splendides *Anœchtochilus*."—It blossomed in our stove in August, 1861, but the flowers are very unattractive as compared with the foliage.

We have species of *Higginsia*, in our herbarium, from New Grenada, but none that exactly corresponds with it.

Fig. 1. Flower. 2. Corolla, laid open. 3. Calyx and pistil:—*all slightly magnified.*



W Fitch, del. et lith.

Vincent Brooks, Imp.

Tab. 5281.

ECHINACEA angustifolia.

Narrow-leaved Echinacea.

Nat. Ord. Compositæ.—Syngenesia Frustranea.

Gen. Char. Capitulum multiflorum, heterogamum; *fl. radii* neutris, longe ligulatis, 1-serialibus; *disci* hermaphroditis, regulariter 5-fidis; *tubo* subnullo, fauce nuda; *limbi* dentibus erectis. *Involucrum* 3-seriale, squamis lanceolatis ciliatis. *Receptaculum* ovatum; *paleis* rigidis, superne cartilagineis; *flores* disci superantibus onustum. *Staminum* filamenta ex ima corolla orta. *Styli* rami appendiculis semilanceolatis superati. *Achenia* tetragona, obpyramidata, crassa, *pappo* irregulariter lacero subcoroniformi decidue coronata.—Herbæ *Boreali-Americanæ, perennes.* Folia radicalia *petiolata*, caulina *alterna, sessilia, serrata aut integerrima.* Rami *superne nudi, monocephali.* Capitula *ampla;* ligulis *purpureis, 2–3-dentatis, 1–2 poll. longis;* fl. disci *obscure virescentibus. De Cand.*

Echinacea *angustifolia;* foliis omnibus lineari-lanceolatis hispidis integerrimis, radicalibus longe petiolatis 3-nerviis, caulinis sessilibus.

Echinacea angustifolia. *De Cand. Prodr. v.* 5. *p.* 354. *Asa Gray, Man. of Bot. Illust. p.* 214. *Chapman, Fl. of the Southern United States, p.* 226.

The genus, like *Rudbeckia*, with which it was associated by Linnæus and the older botanists (having been separated by Mœnch), is peculiar to the Southern United States, scarcely advancing so far south as Mexico proper. The present species has perhaps its northern limit in Iowa, Illinois, and Wisconsin. Berlandier first detected it near Austin, in Texas, and his specimens are described by De Candolle. Our living plant was sent to us by Mr. Leeds, of Manchester, having been reared by Mr. Ross, of Smedley, near that town, from seeds collected by Mr. Bourne in Iowa.

The numerous long purple rays (and they vary from fourteen to twenty, the whole flower measuring nearly six inches across) recommends the plant for cultivation in tufts, in mixed flower-borders. The height is two to three feet; the *stem* simple, partially clothed with long, soft, spreading hairs; *flowers* solitary, the stalk is swollen just beneath the capitulum. *Involucre* with spreading scales. *Corollas* of the ray quite sterile: ligule very

long, purple-rose. *Florets* of the disk perfect, concealed by the numerous pungent scales of the receptacle (whence the generic name, ἐχῖνος, a *hedgehog*), which are rigid, green, lanceolate, tinged with red and terminated by a black rigid spine. *Corolla* tubular, five-toothed; *stamens* included. *Style* exserted. *Ovary* oblong, crowned with a toothed cup-shaped margin. It flowered with us in the open air in July.

Fig. 1. Floret of the ray, with one of its scales. 2. Floret of the disk, with its scale. 3. Scale of the receptacle:—*all more or less magnified.*



Tab. 5282.

PHYLLAGATHIS ROTUNDIFOLIA.

Round-leaved Phyllagathis.

Nat. Ord. Melastomaceæ.—Octandria Monogynia.

Gen. Char. Flos 4-merus. *Calycis* oblongo-campanulati *limbus* membranaceus, obtuse 4-lobus; *lobis* dorso denticulum externum, cuspidatum, apice 3–4-setosum, inferne in nervum abeuntem, gerentibus. *Petala* ovato-elliptica aut obovata, apiculata. *Stamina* 8, æqualia aut subæqualia; *antheris* nonnihil recurvis, a basi ad apicem gradatim attenuatis ideoque subulatis, poro minutissimo apertis; *connectivo* infra loculos nullo, postice ad basin vix conspicue incrassato. *Ovarium* toto ambitu adhærens, apice membrana libera styli basim cingente coronatum, 4-loculare. *Placentæ* lamelloso-cuneiformes, margine libero incrassatæ, multiovulatæ. *Stylus* filiformis, gracilis, *stigmate* punctiformi. *Fructus* (ex auctoribus) baccatus, quadrilocularis. *Semina* ignota.—Frutex *subherbaceus, Sumatranus, macrophyllus;* foliis *longe petiolatis, oppositis, subrotundis, apiculatis, basi subcordatis, margine tenuiter et obsolete sinuato-denticulatis aut subintegerrimis,* 7–9-*nerviis, vix non glabris;* petiolis *sparsim pilosis;* floribus *in capitula axillaria pedunculata dense congestis;* bracteis *coloratis, late cordatis, involucratis, purpurascentibus. Naudin.*

Phyllagathis *rotundifolia;* foliis subrotundis glabris discoloribus subtus ferrugineo-lepidotis, floribus in capitulis involucratis congestis.

Phyllagathis rotundifolia. *Blume, in Nat. Wet. v.* 6. *p.* 2491; *et in Regensb. Bot. Zeit.* 1831, *v.* 2. *p.* 5071. *Mus. Bot. Lugd. Bat. p.* 12. *Korthals in Verh. Nat. Gesch. Bot. p.* 252. *t.* 57.

Melastoma rotundifolium. *Jack in Linn. Trans. v.* 14. *p.* 11. *De Cand. Prodr. Syst. Veget. v.* 3. *p.* 149. *t.* 45.

This is another of the many plants which we owe to the Malay Islands, whose charms depend more on the rich colour of the foliage than on the beauty of the flowers, though, in the present instance, we have there colour also; but it is outdone by the rich tints of the leaves, both above and below, and the plaited character of the latter, with their strong shadows and reflected lights. It was first detected in moist woods of the Musi country, in the interior of Sumatra, and described by our lamented countryman Dr. Jack, in his very valuable memoir on 'The Malayan Species of Melastoma,' published in the Linnæan Society's Transactions, *l.c.* The Dutch appear, at a later period, to have in-

troduced living plants to our gardens, where they are much prized. They flower with us in July. If any figure or recent account of it has appeared in the Continental journals, I have failed to find such; but it must be confessed that either the Continental or our own booksellers keep us sadly behind in the matter of periodical scientific publications.

Descr. *Stem* short, thick, perennial, but rather herbaceous than woody, rooting at intervals, four-sided, dark-purple. *Leaves* approximate, orbicular-ovate, six inches and more long, by four and a half broad, suddenly acuminulate, the margin denticulate, traversed longitudinally by ten strong ribs, prominent beneath; plaited, above deep, rich, glossy metallic-green, partially reddish, beneath bright-red and furfuraceous: the longitudinal ribs are united by curved veins; *petioles* rather long, thick, dark-purple. *Peduncle* short, thick, terminal, and axillary, bearing a *capitulum* of numerous *flowers*, included in a large *involucre* of five or six subrotundo-ovate, dark-purple scales. *Flowers* sometimes trimerous, sometimes tetramerous; the rest as in the generic character.

Fig. 1. Flower. 2. Flower, with the petals removed. 3. Stamens:—*all more or less magnified.*



Vincent Brooks, Imp

Tab. 5283.

RHODANTHE Manglesii, var. *sanguinea.*

Mangles' Rhodanthe, blood-coloured var.

Nat. Ord. Compositæ.—Syngenesia Æqualis.

Gen. Char. Capitulum multiflorum, homogamum. *Involucrum* turbinatum, imbricatum; *squamis* membranaceis, ovatis, acutis, externis argenteis bracteiformibus secus pedicellum, mediis appressis, intimis patentibus stellatis roseis. *Receptaculum* nudum. *Corollæ* quinquefidæ. *Achenia* erostria, lanata. *Pappus* uniserialis, plumosus, setis distinctis.—Herba *Novo-Hollandica, annua, erecta, ramosa, glabra.* Folia *amplexicaulia, oblonga, obtusa, integra.* Capitula *terminalia, solitaria, ex involucro pulchre roseo elegantissima. De Cand.*

Rhodanthe *Manglesii.*

Rhodanthe Manglesii. *Lindl. Bot. Reg. t.* 1703. *Hook. Bot. Mag. t.* 3483. *Don, Brit. Gard. ser.* 2. *t.* 295. *De Cand. Prodr. v.* 6. *p.* 159. *Lehm. Enum. Pl. Preiss. v.* 1. *p.* 447. *Paxton, Mag. of Bot. v.* 3. *p.* 173. *Fl. des Serres, v.* 6. *p.* 622.

Var. *sanguinea;* floribus eximie purpureo-sanguineis, disco atro-sanguineo. (Tab. Nostr. 5283.)

Rhodanthe sanguinea. *Hort.*

Beautiful assuredly as this plant is, and different as is the colour of the flowers, especially of the disk, from the *R. Manglesii* (which has a rose-coloured ray and a yellow disk), and although it is cultivated as a distinct species under the name of *Rhodanthe sanguinea* in gardens, I can only offer it as a variety of that plant. That however published in 1836 is a very unsatisfactory figure, and destitute of analysis, which we are happy to have the opportunity of giving here. The original *Rhodanthe Manglesii* is made great use of in our gardens, in masses, for the ornamenting of our flowerbeds; and the present variety, whether mixed with that or kept separate, will prove a very valuable introduction. The genus belongs to a group of the *Compositæ* which, like the Xeranthemums are called *everlastings*, for the dried specimens retain the beauty of colour in the flowers as in the live state; and the group in Australia is remarkable for the variation of colour in the same type. Only one species is yet known to us, native of Western Australia.

December 1st, 1861.

Descr. *Root* annual. *Stem* erect, one to one and a half foot high, moderately branched, terete. *Leaves* glaucous-green, oblong, subacuminate, but obtuse at the apex, entire, upper ones cordato-acuminate, all amplexicaul at the base, penniveined, the surface dotted, from a number of little hollow pits, best seen under the microscope; *veins* few, simple, almost parallel with the slender costa. *Inflorescence* corymboso-paniculate; *peduncles* and *pedicels* slender, the latter especially, bracteated with small scales, which become narrower under the capitulum, where they are scariose, oblong, and form the turbinate *involucre*. *Corollas* in this variety all rich purple blood-colour, deeper in the disk.

Fig. 1. Portion of a leaf, showing the pits which give the dotted appearance to the surface. 2. Floret of the ray. 3. Floret of the disk. 4. Seta of the pappus:—*all more or less magnified.*



W. Fitch, del. et lith.

Vincent Brooks, Imp

Tab. 5284.

BEGONIA Kunthiana.

Professor Kunth's Begonia.

Nat. Ord. Begoniaceæ.—Monœcia Polyandria.

Gen. Char. (*Vide supra*, Tab. 4172.)

Begonia *Kunthiana;* fruticosa, erecta, glabra, caule succulento, foliis breviter petiolatis inæquilatero-lanceolatis oblongis acuminatis grosse dentatis, basi dimidiato-rotundatis lævissime cordatis, supra saturate viridibus nitidis, subtus purpurascentibus, pedunculis axillaribus 2–3-floris, floribus magnis candidis, petalis florum masculorum exterioribus subrotundato-ovatis acutiusculis, interioribus multo minoribus obovato-spathulatis, apice rotundatis, petalis florum fœmineorum 5 minoribus inæqualibus obovatis, ovarii trialati albidi alis rotundatis una paulo latiore. *Walp.*

Begonia Kunthiana. *Walp. Annal. Bot. Syst. v.* 2. *p.* 650.

Begonia lucida. *Kth. et Bouch. Ind. Sem. in Hort. Berol.* 1858; *Coll. p.* 16. *n.* 30 (*not of Otto and Dietr.*).

Gaerdtia Kunthiana. *Kl. in Walp. Annal. Bot. Syst. v.* 4. *p.* 892.

The Begonias are eminently beautiful, both in flower and in the leaf; the latter, especially, exhibit a richness and variety of colouring unequalled in almost any other genus of plants; and many new varieties of foliage are obtained by skilful management, which are now reckoned among the most charming of plants for stove cultivation, or, in summer, for a warm greenhouse. The genus is most extensive, and comparatively little known, except from garden specimens, and these chiefly natives of South America; for though natives of tropical and subtropical countries generally, cultivators have found it more easy to procure living plants from the Western world than from any other parts of the globe. The Berlin Garden has been long celebrated for its extensive collections; and this circumstance, perhaps, led to the late Dr. Klotzsch publishing numerous figures, and a revision and new arrangement of all the species known to him, in his valuable 'Begoniaceen-Gattungen und Arten,' with a great number of excellent illustrative plates. Of his forty new genera, many of them, doubtless, insufficiently characterized, M. Al-

phonse De Candolle, in his 'Mémoire sur la Famille des Bégoniacées' (published in the Annales des Sci. Nat., 4th ser. vol. xi.), has restored a great number to the original *Begonia*. The present species is certainly not among the least ornamental, and is a native of Venezuela and Caracas. We owe the possession of it to the Royal Garden of Berlin. Few species exceed this in the richness of the colour on the under side of the leaf, contrasting well with the dark glossy green of the upper, and in the size of the flower.

Fig. 1. Immature capsule. 2. Transverse section of the same :—*magnified.*



W. Fitch, del. et lith.

Vincent Brooks, Imp.

Tab. 5285.

DENDROBIUM TRIADENIUM.

Three-knobbed Dendrobium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. Sepala membranacea, erecta vel patentia, lateralibus majoribus obliquis, cum basi producta columnæ connatis. *Petala* sepalo supremo sæpius majora, nunc minora, semper membranacea. *Labellum* cum pede columnæ articulatum vel connatum, semper sessile, indivisum vel trilobum, sæpius membranaceum, nunc appendiculatum. *Columna* semiteres, basi longe producta. *Anthera* bilocularis. *Pollinia* 4, per paria collateralia.—Herbæ *epiphytæ, nunc caulescentes, nunc rhizomate repente pseudobulbifero.* Folia *plana, sæpius venosa.* Flores *solitarii, fasciculati, vel racemosi, speciosi. Lindl.*

Dendrobium (§ Onychium) *triadenium;* radicibus villosis, caulibus elongatis teretibus ramosis basi fusiformibus, foliis ovato-oblongis obtusis, panicula brevi terminali confertiflora racemosa, sepalis ovatis acutis, petalis labelloque oblongis undulatis rotundatis emarginatis hoc glabro utrinque unidentato, medio tuberculo tricrenato aucto, mento brevi obtuso, columna apice dentata, stigmate villoso. *Lindl.*

Dendrobium triadenium. *Lindl. in Bot. Reg.* 1846, *sub t.* 64, *et v.* 33. *t.* 1.

This agrees in all respects with the plant above referred to, and the figure there quoted, of Dr. Lindley, save in the absence of the rather deep rose-coloured maculæ on the sepals and petals, of which but a faint tinge is here seen, and in the absence of the bright orange-colour at the tips of the glands on the labellum: it is therefore less ornamental. The species has been now long cultivated in our orchideous collections, and is supposed to be a native of the Malay Archipelago. Introduced by Messrs. Rollison, of Tooting. Flowers with us in September.

Descr. *Stems*, rather than *pseudobulbs*, clustered, throwing out downy, fleshy, vermicular *radicles*, erect, ten inches to a foot or a foot and a half long, rather slender, jointed, striated, sheathing, swollen upwards. *Leaves* numerous, distichous, elliptical, sessile, subcordate at the base, thick, fleshy, very obtuse, gradually smaller upwards. *Panicle* short, terminal, bearing about ten to twelve, moderately large, white *flowers*, more or less dis-

tinctly tinged with rose-colour. *Sepals* spreading, broad-oblong, obtuse. *Petals* subrotundate, waved, also spreading. *Lip* longer than the sepals, broad-obcordate, narrowed at the base, three-lobed; lateral *lobes* represented by a blunt tooth on each side, intermediate one large and broad, waved, rotundate, with a deep notch at the apex, and a raised crest of three ridges on the disk, near the base or claw, obtuse at the apex, thus imperfectly representing three glands, whence the specific name; this crest is yellow, often orange, at the extremity. *Spur* short, obtuse. *Column* short, truncated and subcrenate at the apex, with a line of hairs in front.

Fig. 1. Column. 2. Labellum:—*magnified.*



W. Fitch, del et lith

Tab. 5286.

VERTICORDIA nitens.

Glistening Verticordia.

Nat. Ord. Myrtaceæ: Trib. 1, Chamælaucieæ, *De Cand.* Polyandria Icosandria.

Gen. Char. *Flos* ante evolutionem *bracteis* 2 liberis concretisve involucriformibus cinctus. *Calycis lobi* in lobulos 5–7 palmatipartiti. *Petala* 5. *Stamina* 20, quorum 10 sterilia ligulæformia, 10 alterna fertilia, inter se æqualia. *Stylus* filiformis, exsertus. *Stigma* barbato-plumosum. *Ovarium* uniloculare, *ovula* 5–6 centro adfixa erecta includens. *Fructus* 1-spermus. *Semen* globosum.—Frutices *Australasici*, Pileanthi *facie*. Folia *opposita, lineari-subtriquetra*. Flores *longiuscule pedicellati, ex axillis supremis orti, in* corymbos *terminales dispositi*. *De Cand.*

Verticordia *nitens;* corymbo composito multifloro condensato, tubo calycis turbinato glabro, lobis palmato-9-fidis, lobulis pinnato-plumulosis, petalis subcartilagineis ovatis margine superiori inciso-fimbriatis, staminodiis lineari-subulatis integerrimis, connectivo in galeam cristatam antheræ imminentem extenso, stylo incluso imberbi, bracteolis muticis caducis, foliis filiformi-teretibus oblique mucronatis patulis. *Schau.*

Verticordia nitens. *Schauer, Monograph. Myrtac. Xerocarpic. p.* 71. *t.* 4 *B. f.* 1–5.

Chrysorrhoe nitens. *Lindl. in Bot. Mag. Comp. v.* 2. *p.* 357; *and in App. to the Bot. Reg. t.* 1.

It is now more than twenty years since a figure of this plant, made from a dried specimen sent from Western Australia by Captain James Mangles, appeared in Dr. Lindley's 'Sketch of the Vegetation of the Swan River Botany,' and was there described as "the magnificent *Chrysorrhoë nitens*, whose yellow flowers, of metallic lustre, form masses of golden stars some feet in diameter." Ever since, it has been the desire of nurserymen and others engaged in horticulture, to import this lovely plant; but, though seeds have been repeatedly sent, and to our garden amongst others, either they have not germinated, or died off before the flowering-time. At length the Messrs. Veitch, of the Exeter and Chelsea Nurseries, have succeeded in rearing and flowering this plant, in August, 1861, not, indeed, in the per-

fection to which it attains in its native country; and we are indebted to them for the specimen here figured.

Descr. A twiggy *shrub*, very much branched, with opposite *branches;* three to four feet high, corymbose at the top, so thick as to form, in its native country, a spreading mass of golden-yellow flowers, some feet in diameter: these flowers retain their colour and brilliancy when dry. *Leaves* opposite or quaternate, linear-filiform, obtuse, about an inch long. *Pedicels* slender, incrassated a little upwards, above which, at the setting-on of the calyx-tube, is a scar, whence two, cucullate, dotted *bracts* have fallen. *Calyx*, with the *tube* turbinate: the *limb* of five lobes, digitately divided into five or six or more, linear, long-ciliated *segments*. *Petals* five, broad, ciliate, dotted. *Stamens* twenty; ten sterile, short, and thread-like; ten perfect, and twice as long. *Anther* very peculiar, two-celled, large, ovate, rostrate; at the base are two globose cells; these have a larger, cucullate, fleshy *connectivum*, which looks like a calyptra. *Ovary* one-celled, with two *ovules: style* from the centre of a depressed *disk: stigma* a mere point.

Fig. 1. Leaf, with a small portion of a branch. 2. Bud, with its deciduous bracteas. 3. Bud, from which the bracts have fallen. 4. Fully expanded flower. 5. Calyx-lobe. 6. Petal. 7. Ovary, cut through vertically, with the style and portion of the stamens. 8. Perfect anther:—*all more or less magnified.*

W. Fitch, del. et lith

Vincent Brooks, Imp

Tab. 4287.

VRIESIA xyphostachys.

Dagger-spiked Vriesia.

Nat. Ord. Bromeliace.e.—Hexandria Monogynia.

Gen. Char. *Sepala* tria, convoluta, æqualia, petalis apice revolutis (an semper?) breviora. *Squamæ*, cuique petalo 2, semiadnatæ, indivisæ. *Stamina* exserta. 3 libera, petalorum basi inserta, 3 inter petala inserta, iisque basi connata; *antheræ* lineares, planæ, posticæ. *Ovarium* semi-inferum, conicum: *stigma* 3-lobum; *lobis* convolutis et sinuatis, villosis.—Folia *plana (sed canaliculata), erecta.* Flores *distichi, bracteis magnis canaliculatis coloratis. Lindl.*

Vriesia *xyphostachys*: foliis e latissima basi longe subulatis canaliculatis atro-virentibus glaucis subfarinosis, scapo simplici rubro, spica lanceolata compressa e bracteis ovatis cymbiformi-carinatis densissime distiche imbricatis viridibus inferioribus coccineis flavo-variegatis, floribus longe exsertis cylindraceis viridi-purpureis, filamentis intense purpureis longe exsertis stylo brevioribus, petalis esquamosis?

I have already, elsewhere, expressed the difficulty I feel in clearly distinguishing *Vriesia* of Dr. Lindley, from *Tillandsia*. If our *Vriesia glaucophylla*, figured and described at Tab. 4415, be a true *Vresia*, this is unquestionably of the same genus, but easily distinguished from it by its smaller size and a darker-coloured foliage, by the solitary spike of the scape, and the far more numerous, more carinated, and very compactly imbricated bracts of the spike, presenting as this latter does two very sharp edges. The flowers, too, are of a rich deep purplish-blue. It was received by us from tropical America, and it is believed from Brazil, and flowered in a moist stove in August, 1861.

Descr. Stemless; *root* apparently a short, creeping caudex, or rhizome. *Leaves* radical, a span to a foot long, from a broad, amplexicaul, convex base, gradually tapering into a long, subulate point, channelled, entire, dark glaucous-green; the lower ones purplish at the base. *Scape* a foot long, erect, bright-red, bracteated with small, subulate, leaf-like, appressed *scales*, red at the base, all red upwards. *Spike* singularly flattened, solitary, six

inches long, one inch broad, formed of numerous, closely-placed, equitant, sharply cymbiform, carinated *bracts;* thus the spike is sharply two-edged; the bracts are green, becoming coloured, tinged with bright-yellow, and bright-red towards the base; from these equitant *bracts* one *flower* only opens at a time, and this is exserted much beyond the point of the bract, subcylindrical, of a deep rich purple colour. *Filaments* of the purple *stamens* also are exserted beyond the petals, but are shorter than the style.

Fig. 1. Entire flowers. 2. Single petal and stamen. 3. Pistil :—*magnified.*



2.

5.

1.

3.

4.

Tab. 5288.

BOLBOPHYLLUM BARBIGERUM.

Bearded Bolbophyllum.

Nat. Ord. Orchidaceæ.—Gynandria Monandria.

Gen. Char. Bolbophyllum, *Thouars. Sepala* erecta, acuminata, subæqualia, lateralibus cum pede columnæ connatis et basi obliquis. *Petala* nana, rarissime sepalis subæqualia. *Labellum* cum pede columnæ articulatum, unguiculatum, sæpius integrum aut posticum. *Columna* nana, antice bidentata aut bicornis. *Anthera* 1–2-locularis. *Pollinia* 4, libera vel valde inæqualia, nunc in uno connata, nunc per paria cohærentia, altero cujusve paris minuto lobuliformi.—Herbæ *epiphytæ*, rhizomate *repente pseudobulbifero*. Folia *coriacea, avenia.* Racemi *radicales. Lindl.*

Bolbophyllum *barbigerum;* pseudobulbis lenticularibus, foliis solitariis racemo erecto brevioribus, bracteis ovatis amplexicaulibus ovaria subæqualibus, sepalis lineari-lanceolatis acuminatis, petalis subulatis columna brevioribus, labello lineari-lanceolato acuminato villoso apice stuposo-barbato. *Lindl.*

Bolbophyllum barbatum. *Lindl. Bot. Reg. t.* 1942.

Glorious as are the flowers of many of the larger kinds of Orchideous plants, yet many of the smaller kinds are more wonderful and more curious in their structure and organization, and this is assuredly one of that kind. It is a native of Sierra Leone, was imported by Mr. Loddiges, in 1836, and to him we are indebted for the plant here represented, which flowered in the Orchideous house at Kew.

Descr. *Rhizome* creeping, rooting, bearing several flat, nearly orbicular *pseudobulbs*, about the size of a shilling, green, fleshy; from the top edge of these a solitary, oblong, fleshy, green *leaf* appears; and from the base of these arises the *raceme* of flowers on a bracteated *peduncle* about as long as the raceme itself; *bracteas* from a broad, amplexicaul, and sheathing base, acuminate; large bracts are upon the raceme, one at the base of each flower. *Flowers* twelve to fourteen on a raceme. These are so admirably described by Dr. Lindley, that I shall use his own words:—"The three *sepals* are narrow, and taper to a point, pale-green externally, dull chocolate-brown in the inside. The *petals* are

minute, slender-pointed scales, shorter than the column, and not discoverable without disturbing the sepals. The *column* is dwarf, and terminated in part by two, long, curved horns. The *anther* is a little round lid, beautifully studded with crystalline points. The *lip* is one of the most extraordinary organs known even among Orchidaceous plants: it is a long, narrow, flexuose, sharp-pointed body, closely covered with a yellow felt; just within its point there is a deep-purple *beard* of exceedingly fine compact hairs; on the under side, at a little distance from the point of the lip, is another such *beard;* and besides these there is, at the end of the lip, a *brush*, consisting of very long purple threads, so excessively delicate, that the slightest disturbance of the air sets them in motion, when they wave gently to and fro, like a tuft of threads cut from a spider's web; of the last-mentioned hairs some are of the same thickness throughout, others terminate in an oblong club, so that when the hairs are waving in the air (and I do not know that they are ever entirely at rest) a part floats along gracefully and slowly, while the others are impelled by the weight of the glandular extremities to a more rapid oscillation. Nor is this all; the lip itself, with its yellow felt, its two beards, and its long purple brushes, is articulated with the column by such a very slight joint, that to breathe upon it is sufficient to produce a rocking movement, so conspicuous and protracted, that one is really tempted to believe that there must be something of an animal nature infused into this most unplant-like production."

Fig. 1. Front view of a flower. 2. Side view of ditto. 3. Column, and minute petals. 4. Labellum, seen from above. 5. Club-shaped apex of the long hairs of the lip:—*all more or less magnified.*